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ON EPIDEMIC CHOLERA.

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A TREATISE

ON

EPIDEMIC CHOLERA

BY

J. RUTHERFURD RUSSELL, M.D.

WITH AN APPENDIX OF CASES TREATED IN THE EDINBURGH HOMŒOPATHIC DISPENSARY, 1848-49, AND A MAP SHOWING THE COURSE OF THE CHOLERA FROM INDIA TO BRITAIN.

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1849

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Rutland Square, *June* 1849.

My Dear Drysdale,

To you, as to an elder brother, I dedicate (without permission) this first publication of mine which has appeared without your name as well as my own on the title-page. Accept it as a tribute of affectionate respect for your character, and as the token of a friendship (*esto perpetua*) which has now lasted without interruption for the best part of twenty years.

Yours truly,

J. RUTHERFURD RUSSELL.

J. J. Drysdale, Esq., M.D., Liverpool.

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PREFACE.

That the Cholera, which is now committing such frightful havoc in Paris, will, before long, prevail as an epidemic in this country, hardly admits of a doubt; and while it would serve no good purpose to conjecture the particular places which it is most likely to select for its first invasion, it is obviously the imperative duty of all to be prepared to do their utmost to mitigate the sufferings from a pestilence which no human power can avert. How much may be done by a judicious anticipation of the event is shown by what took place in Edinburgh. The subject had been considered by the Committee of the Homœopathic Dispensary a year before the cholera made its appearance; and three days after its existence in Edinburgh was announced, our whole machinery was in full operation. We were the first in the field, and the consequence was that we treated about a fourth of all the cases of cholera which occurred here. This we could not have done but for the liberal support given us by our friends. Not only

were we enabled to meet the unusual outlay required for keeping the Dispensary constantly open, but a fund was placed at our disposal by which we could relieve the most destitute after they had recovered from cholera, and thus float them over the period of convalescence, and save them from starvation or pauperism. The good thus effected was very great; and we only regret that the supply was so temporary. We cannot but think that the physician is the proper channel of relief to the poor; and that if it were possible to have a relief fund attached to each Dispensary, hundreds might be saved by it from falling upon the parish. Just consider how directly and unerringly all the money given goes to its destined object—not a penny is spilt by the way; and compare this plan with the cumbrous one of parish officers, inspectors, and all the expensive machinery of ordinary relief. But, moreover, look to the immeasurable moral superiority; death is the great leveller of rank, and a deadly disease begets a certain feeling of brotherhood between the sick and the attendant. To take money from the hand of such an attendant at such a time brings with it no sense of degradation; and if the physician tell the poor sufferer that he himself has received the money from a kind friend for the purpose of relieving him, the noblest sentiments of gratitude to the unseen donor are called forth. And how easily could such a fund be raised! During the prevalence of cholera, from one individual—and one not rich, except in good works—we received a guinea a-week,

obtained from benevolent persons who readily contributed to so manifest a charity. Why should such a stream as this not be perennial? If we could afford to have a permanent house-surgeon, and a relief fund to the amount of a guinea a-week, to be laid out in food for patients recovering from severe illness, we could confer an incalculable amount of benefit upon the poor. But the question seems to be now, not whether we shall be enabled to enlarge our Dispensary, but whether we shall be able to keep it up on its present scale? The amount of subscriptions this year is by no means creditable to the large body of wealthy adherents to Homœopathy over Scotland, for we have patients from all parts of the country; and when it is recollected that more than *twelve thousand* patients have applied for relief since the Institution was opened, and that the annual expense is not above eighty pounds or so, we cannot help thinking that it would be a disgraceful exhibition of selfishness if the Institution were allowed to languish for want of proper support; and it would lead us to believe that the very handsome sums that poured in at the time of the cholera were wrung rather from the fears than the charity of those who gave them. This we know was not the case in many instances; but unless the efficiency of the Institution be maintained now when the fear of the pestilence is gone, we cannot help ascribing a part of the apparent generosity to some such ignoble source.

Before concluding, we would tender to Dr. Atkin of

Hull our acknowledgments for the assistance he has afforded us. When acting as House-Physician to the Dispensary, not only did he discharge all the duties required by his office in the most efficient manner possible, but also prepared the valuable tables of which we have had occasion to make use in our work, besides giving us valuable aid in other parts of it. We would also thank Mr. Adie, our townsman, and distinguished optician, for the weather tables which he kindly furnished; and Mr. Alexander Bain, of the Board of Health, for his kindness and attention in giving us every information in his power which we required of him.

We take this opportunity of informing all who are interested in it, that we are now collecting materials for a life of Hahnemann, and we should gratefully accept any assistance from those who have either had the means of acquiring accurate information regarding him, or who could favour us with any of his letters.

We shall not attempt any apology for the errors and omissions of this book, or the blemishes and inaccuracy in its composition, farther than that it was necessary, in order to make it of any use, to prepare it with the greatest possible speed, that it might be accessible before the cholera lighted upon the country; and those who know what it is to write a book at the intervals of anxious business, and with the printing-press rattling at one's heels, will be the first to make due allowance for the imperfections of the present publication.

TREATISE ON EPIDEMIC CHOLERA.

INTRODUCTORY CHAPTER.

ON EPIDEMICS IN GENERAL.

The appalling destruction of human life, caused by some of the pestilences in former ages, was so much the most striking feature about them, that to it almost alone attention was directed. The history of the Plague of the 14th century was the narrative of death: the very name of the disease expresses this idea. It was called in one language "La Mortalège grande," the great mortality; in another, "Der schwarze Tod," the black death. And no wonder it should be so, when we read, "that in Cairo, from ten to fifteen thousand died in a single day, and that for many days successively. In China, more than thirteen millions (nearly the population of England) are said to have died. India was depopulated. Tartary, the Tartar kingdom of Kaptschuk, Mesopotamia, Syria, Armenia, were covered with dead bodies. The Kurds fled in vain to the mountains. In Caramania and Cæsarea *none* were left alive. On the roads, in the Camps,

in the Caravansaries, unburied bodies alone were seen." "Cyprus lost almost all its inhabitants; and ships without crews were often in the Mediterranean, as afterwards in the North Sea, driving about and spreading the Plague wherever they went."* "It was reported to Pope Clement at Avignon, that, exclusive of China, twenty-three millions and upwards had fallen victims to the Plague throughout the East." Sixty thousand died at Florence; a hundred thousand at Venice; a hundred thousand at London; fifty thousand at Norwich. Many towns were bereft of their inhabitants. "When the Plague ceased, men thought they were still wandering among the dead, so appalling was the livid aspect of the survivors, in consequence of the anxiety they had undergone, and the unavoidable infection of the air." Is it possible for us to realize the horrors of such scenes? In ordinary times, death is the exception—life the rule; all signs of death are immediately removed; and although it is continually occurring, it is as quickly concealed. But when death becomes the rule, and life the exception, how inconceivably awful must be the feeling! If solitary confinement deprive a man of reason, what must it be to be left the solitary tenant of a city or a ship? The mind cannot take in the horror and loneliness of so frightful a condition. To be alive amid silence and corruption—surely the most agonizing form of death would be less terrible than to live in such a tomb. No wonder, we repeat, that those who looked on such plagues found nothing in them of any interest except the results.

To us, however, who can calmly contemplate fatal epi-

* This recalls to one's mind the scene of "the ancient mariner," and may have given the hint to the poet Campbell, who, in his picture of horrors which must environ the last of the race, "who shall creation's face behold, as Adam saw its prime," describes how

—— ships were drifting with the dead,
To shores where all was dumb.

demics, their essential characteristic is not the number of their victims, which depends upon accidental circumstances. And it is of great importance that we should remember this; for in turning from such descriptions of death to the recent or present epidemic of Cholera, in some parts of this country, if the only interest were derived from the bills of mortality, it would immediately subside, when we found but a very trifling increase in the numbers on these tables, or perhaps no increase at all. Although in a life-insurance point of view, the cholera may be quite insignificant, yet as a member of the class of fatal epidemics, it is most interesting and important; and who knows that it may not become invested with the more terrible interest of being a great mortality by becoming a general, instead of a partial disease? The mortality of cholera is very great; if it were as wide-spread as it is malignant, the result would be frightful. And we should bear in mind that we can do but little to prevent its diffusion, and indeed not much more to lessen its fatality. Thus we find this epidemic to be generically bound up with former ones; and we believe it is only by investigating what facts are common to all, that we shall arrive at a knowledge of the laws that regulate the occurrence and the course of each, and shall learn why they have so baffled all attempts to arrest their progress, and neutralize their destructive power.

One of the most striking features of many former plagues is that they have not occurred without previous warning. They appear to have had their origin in the planet we dwell on; and before their coming, the earth gave signs of some great internal disturbance. The pestilence which swept its surface, seemed the relief to those convulsions which shook its frame. Or taking a higher point of view, we may regard the wonderful succession of strange phenomena which pre-

cede a great destruction of human life, as so many indictments served upon our race by the Judge of the world, before its guilty inhabitants are cited to His tribunal. May not the recurrence of such a judgment, in an age like ours, when by the wonderful triumphs of scientific perseverance, man seems to have got the better of the earth altogether, and spreading it over with a tissue of rails and wires, as with a system for circulation and nervous communication, to have fashioned it into an obedient organism over which he presides, be a reassertion of the often repeated and as often forgotten fact, that "the earth is the Lord's, and they that dwell thereon?" If it be superstition which has led man in all former ages to associate the signs in the sky with the great events among the nations of the earth, in the instance of plagues at least it is a very reasonable belief, fully borne out by the history of the times. After a general observation to the effect that "the black death" was preceded by unusual terrestrial convulsions,* Hecker continues:—"The series of these great events began in the year 1333, fifteen years before the Plague broke out in Europe. They first appeared in China. Here a parching drought, accompanied by famine, commenced in the tract of country watered by the rivers Kiang and Hoai. This was followed by such violent torrents of rain in and about Kingsai, at that time the capital of the empire, that, according to tradition, more than four hundred thousand people perished in the floods. Finally, the mountain Tsincheou fell in, and vast clefts were formed in the earth. In the succeeding year (1334) passing over fabulous traditions, the neighbourhood of Canton was visited by inundations; whilst in Tche, after an unexampled drought, a plague arose which is said to have carried off five

* The Epidemics of the Middle Ages, by J. F. C. Hecker, M.D. Translated by B. S. Babington, M.D., F.R.S. London, 1844.

millions of people. A few months afterwards, an earthquake followed, at and near Kingsai ; and subsequently to the falling in of the mountain of Ki-ming-chan, a lake was formed of more than a hundred leagues in circumference, where again thousands found their grave. In Houkouang and Ho-nan, a drought prevailed for five months ; and innumerable swarms of locusts destroyed the vegetation ; while famine and pestilence, as usual, followed in their train. Connected accounts of the condition of Europe before this great catastrophe are not to be expected from the writers of the fourteenth century. It is remarkable, however, that simultaneously with a drought and renewed floods in China in 1336, many uncommon atmospheric phenomena occurred, and in the winter, frequent thunderstorms were observed in the north of France ; and so early as the eventful year of 1333, an eruption of Etna took place. According to the Chinese annals, about four millions of people perished of famine in the neighbourhood of Kiang in 1337 ; and deluges, swarms of locusts, and an earthquake which lasted six days, caused incredible devastation.

" The signs of terrestrial commotion commenced in Europe in the year 1348, after the intervening districts of country in Asia had probably been visited in the same manner.

" On the island of Cyprus the plague from the East had already broken out ; when the earthquake shook the foundations of the island, and was accompanied by so frightful a hurricane that the inhabitants, who had slain their Mahometan slaves in order that they might not themselves be subjugated by them, fled in dismay in all directions. The sea overflowed, the ships were dashed to pieces on the rocks, and few outlived the terrific event, whereby the fertile and blooming island was converted into a desert. Before the earthquake a pestiferous wind spread so poisonous an odour

that many overpowered by it, fell down suddenly and expired in dreadful agonies. * * *

"Pursuing the course of these grand revolutions further, we find notice of an unexampled earthquake which, on the 25th of January 1348, shook Greece, Italy, and the neighbouring countries. Naples, Rome, Pisa, Bologna, Padua, Venice, and many other cities suffered considerably: whole villages were swallowed up—castles, houses, and churches were overthrown, and hundreds of people were buried beneath their ruins. In Carinthia thirty villages, together with all the churches, were demolished; more than a thousand corpses were drawn out of the rubbish; the city of Villach was so completely destroyed that very few of its inhabitants were saved; and when the earth ceased to tremble it was found that mountains had been removed from their position and many hamlets were left in ruins.

"More destructive earthquakes extended as far as the neighbourhood of Basle, and recurred until the year 1360 throughout Germany, France, Silesia, Poland, England, and Denmark, and much farther north.

"Great and extraordinary meteors appeared in many places, and were regarded with superstitious horror. A pillar of fire which, on the 20th of December 1348, remained for an hour at sunrise over the Pope's palace at Avignon; a fireball which in August of the same year was seen at sunset over Paris, and was distinguished from similar phenomena by its longer duration, not to mention other instances, mixed up with wonderful prophecies and omens, are recorded in the chronicles of that age.

"The progress of connected natural phenomena from east to west—that great law of nature—is plainly revealed, which has so often and evidently manifested itself in the earth's organism, as well as in the state of nations dependent upon

it. In the inmost depths of the globe that impulse was given in the year 1333, which in uninterrupted succession for six and twenty years shook the surface of the earth, even to the western shores of Europe. From the very beginning the air partook of the terrestrial concussion, atmospheric waters overflowed the land, or its plants and animals perished under the scorching heat. The insect tribe was wonderfully called into life, as if animated beings were destined to complete the destruction which astral and telluric powers had begun. Thus did this dreadful work of nature advance from year to year: it was a progressive infection of the zones, which exerted a powerful influence both above and beneath the surface of the earth."

We have quoted the above passages at considerable length to bring distinctly into view two important facts. The first is, that fatal epidemics which affect the inhabitants of the earth generally are in some way or other connected with telluric phenomena, and that their course is in a given direction, from east to west. In the words of a French author on the subject :—" Le grand mouvement des phénomènes physiques de l'univers se fait d'orient en occident, tel que celui de la lune et des autres constellations, ainsi que du flux et reflux de la mer, tandis que la terre seule opère sa révolution en sens contraire.

" Le genre humain a pris naissance en orient ; il s'est propagé de l'est à l'ouest, des rives de l'Euphrate à l'océan occidental : ainsi les premiers enfants de la terre peuplèrent l'Inde, l'Afrique, le sud-est de l'Europe. Dans la suite les Scythes et les Tartares franchirent les monts Ourals et le Caucase pour venir habiter la Russie, la Turquie, et les bords de la mer noire et les grands fleuves de l'Europe. De-là sortirent les Huns, les Lombards, les Alains, les Vandales, les Suèves, les Germains, les Galles, les Goths, les Visigoths,

les Bourguignons qui s'établirent le long du Danube, du Rhin, et de la mer du nord. Delà comme un torrent débordé et impétueux ils s'élancèrent dans les Gaules et l'Ibérie. Plus-tard, les Maures vinrent aussi de l'orient s'établir dans cette dernière contrée, tandis que les Normands envahissaient la Gaule occidentale, et les Saxons la Grande Bretagne. On voit encore de nos jours des peuplades partant de l'est de l'Europe pour aller fonder des colonies en Amérique. Enfin toutes les irruptions des Barbares ont eu lieu dans la direction de l'orient à l'occident.

" La même direction s'observe à l'égard des épidémies, ainsi la Peste, la Variole, la Rougeole, la Lèpre nous furent apportées de la Turquie, et de la Syrie, par les Maures et les Juifs chassés par les Califes et les Croisés. La peste noire du 14me siècle prit naissance au Katai en Chine, et vint terminer ses ravages et son existence sur les rivages de l'océan. Les épidémies catarrhales de 1239, 1311, 1323, 1400, 1427, 1557, 1580, et plusieurs autres qu'on appelle la Russe, la Muscovite, l'Influenza, la Dando, la Coquette, &c., sont toutes venues du nord-est de l'Europe et ont expirées sur les bords de l'Océan Atlantique. Le Typhus est venu de la Hongrie, au 16me siècle, on l'appela fièvre Hongroise, enfin le Cholera nous est arrivé des extrémités orientales de la Chine et de l'Inde. Nous pourrions citer aussi de nombreuses épizooties et notamment celle de 1814 qui ont suivi la même direction."*

If we had any means of ascertaining the natural succession of these phenomena, it would be an interesting addition to our knowledge; but there are insurmountable difficulties in doing so with regard to occurrences spread over so vast a tract of the earth, and of which such imperfect accounts are preserved The second act may have commenced at one place be-

* Histoire Méd. des Maladies Epidém. Par J. A. F. Ozanam Vol. ii. p 254.

fore the first is finished at another no great distance off; and in the narrative of the occurrences two or more may have been blended, and thus at the outset create inextricable confusion.

The only instance in ancient and strictly authentic history where we have a series of such occurrences may be considered by many as altogether out of the pale of scientific investigation, belonging to the *preter*natural, not to the natural order of events. We refer to the Plagues of Egypt, described by Moses. To prevent misunderstanding, we are anxious to begin by saying, that supposing the phenomena in question to be strictly in accordance with natural laws, this does not at all imply that they are not also miraculous. The meaning of a miracle is not to introduce a new power disconnected with the ordinary operations of nature, and so tending rather to strengthen than to uproot the mischievous error of regarding these operations as resting on something else than the constant Divine Will. It is rather by a startling and unusual exhibition of the same power by which all things consist from day to day, to recall the attention of those who are thus emphatically addressed to the fact that all these agencies, (in the particular sphere of the miracle,) are under the immediate command of a supreme moral Governor, at whose bidding they utter these strange voices. To effect this object it is not necessary that any known laws of nature be suspended, far less violated; it is enough that the events be such as cannot at the time be referred to any known sequences, on account of their nature, their intensity, or their concentration, as it were, into one point, and that point indicating a great moral purpose.* The miracle will be

* The miracle is not a *greater* manifestation of God's power than those ordinary and ever repeated processes (by which nature is sustained); but it is a different manifestation. By those other God is speaking at all times, and to all the world; they are a vast revelation of Him. "The invisible things of Him are clearly seen, being understood by the things that are made, even His

much more obvious, if the event be foretold with a minuteness of detail far beyond the powers of science to attempt, and its moral purpose be at the same time expressly announced. Without such announcement it may be unintelligible. Had Moses not spoken to Pharaoh, and proclaimed beforehand the definite object to be served by the terrible catastrophes which were so soon to follow, the tyrant, though terrified—"for conscience doth make cowards of us all"—might have been as much at a loss to account for the dreadful scenes he witnessed as we may suppose the Pope to have been when he saw a pillar of fire resting over his palace at Avignon.

We make these observations on the assumption that the succession of terrific phenomena rising step by step to the climax of the destruction of the people of Egypt, by means of which the children of Israel were set free, are capable of explanation by natural laws, and therefore, besides conveying, as they always must to the devout mind, one of the most emphatic moral lessons on record, may also be a proper object of scientific reference.

In the observations on the plagues of Egypt which we are about to make, we have taken Hengstenberg* for our guide;

eternal power and Godhead." (Rom. i. 20.) Yet from the very circumstance that nature is thus speaking unto all—that this speaking is diffused over all time, addressed unto all men—from the very vastness and universality of this language it may miss its aim. It cannot be said to stand in nearer relation to one man than to another—to confirm one man's word more than that of others—to address one man's conscience more than that of every other man. However it may sometimes have, it must often lack a peculiar and personal significance. But in the miracle wrought in the sight of some certain men, and claiming their special attention, there is a speaking to them in particular. There is then a voice in nature which addresses itself directly to them—a singling them out from the crowd. It is plain that God has now a peculiar word, which they are to give heed to—a message to which he is bidding them listen.—*Notes on the Miracles of our Lord.* By Richard Chevenix Trench, M.A., Professor of Divinity, King's College, London, &c. &c. p. 11.

* Egypt and the Books of Moses. By Dr. E. W. Hengstenberg, Professor of Theology at Berlin. Translated by R. D. C. Robins. American edition.

and all Biblical students are aware that in his name they have the best security both for the learning and soundness of the interpretation of Scripture.

To have a clear idea of the occurrences described in the beginning of Exodus, we require to determine the relative locality of the Israelites and Egyptians, and also the time of year of the events. The land of Goshen seems to have been the region east of the Tanitic arm of the Nile, as far as the Isthmus of Suez, on the border of the Arabian desert. It was therefore a border country, out-lying, not surrounded by other Egyptian territory. The ten plagues must have occurred between the month of July and the following month of April.

The absence of contemporary history prevents our knowing whether they were confined to Egypt, or extended over a larger portion of the earth. It is probable that some remarkable meteorological phenomena had occurred at the source of the Nile, or, at all events, high up the river. But whether these supposed phenomena were attended by a pestilence or not, we have no means of ascertaining.

The first four plagues seem all to have arisen from a common cause—an extraordinary inundation of the Nile. The expression that the waters were turned into blood means that they looked like blood, and were unfit for use: as when Joel says—"the sun shall be turned into darkness, and the moon *into blood*,"—that is, shall have the colour and appearance of blood. Generally speaking, the Nile water is excellent for drinking; but in seasons of great heat, when the river has been unusually low, on its first rising it is quite discoloured, and undrinkable. Thus, "in the year 1199 the increase of the Nile was smaller than it had ever been known. About two months before the first indications of the inundation, the waters of the river assumed a green

colour; this increased by degrees, and it became putrid and offensive to the taste; sick persons avoided drinking from it, and drank well-water. By boiling, its smell and taste became worse. There also appeared in it worms and other animals which live in stagnant water." (In De Sacy, on Abdollaliph, p. 332.) Again, in 1673, the Nile reddened in July, and continued so till December. (*Ib.* p. 346.) The plague consisted in the excessive degree of reddening and putridity. The ordinary amount of impurity was removed by putting the water into vessels of wood and stone, whereby a deposit took place, and the water above became clear; but in this instance it remained red and blood-like in all the vessels of the Egyptians.

The second plague—that of the frogs—is simply a greatly increased number of those animals, which, by all accounts, are generally abundant enough in Egypt. In some parts of Italy we have seen frogs in such swarms on the dry ground that it was almost impossible to set down the foot without crushing some of them. "In the summer of 1831, I often observed immense flocks, if I may use the term, of young toads in the vicinity of Sunderland, which I pointed out to several of my friends."*

The expression used to describe the third plague is properly translated gnats. All travellers speak of gnats as an ordinary plague of the country. They pursue the men, prevent their eating, disturb sleep, and cause swellings which are very painful. They are most abundant after the rice harvest, that is, at the end of the inundation of the Nile, and would naturally be increased by an excessive extent of flooded land.

The fourth plague was that of the flies. These, too, torment the inhabitants of Egypt even yet to a great extent. One traveller says: "The most numerous and troublesome insects

* The Cholera of Sunderland, by W. Reid Clanny.

in Egypt are flies. Men and animals are grievously tormented by them. It is impossible to form an adequate conception of their fury when they wish to fix themselves on any part of the body. If they are driven away, they light again the same instant, and their pertinacity wearies the most patient."

We class these first four plagues together, because they are of a local character—being peculiar to the climate and geographical conditions of Egypt. However, we may notice in passing, that a great increase of insect life has frequently been observed to attend or precede many epidemics, and, among others, the cholera. So that perhaps we may legitimately include the inundation of frogs, gnats, and flies in the proper series of antecedents of the subsequent great mortality, although the nature of the soil of Egypt gave it what we may call a predisposition to suffer from them to an unusual degree, and that they should be of an unusual kind.

The fifth plague was the destruction of cattle by a murrain. Before an epidemic, it is not uncommon to have a disease among the lower animals. A most deadly distemper prevailed among the cattle in this country during the years 1846-47. Whether we have a right to regard the potato disease as the first indication of the approach of an epidemic, is certainly a curious question—as if beneath the first wave of noxious influence, there drooped the most sensitive of the vegetable kingdom, under the second there fell the cattle, and under the third man—the disease in each case being conditioned by its subject.

The sixth plague—that of boils—was probably some painful but not deadly cutaneous eruption. We have an example of a mild epidemic preceding a deadly one in the influenza of 1847. A succession of epidemics increasing in severity has also been noticed. Thus in the years 1733, 1738, and 1743, there raged a succession of epidemics quite

different from one another. They extended over both the Old and New World, and are called by French writers La Grippe, La Folette, and La Russe.*

The seventh plague was a tempest. We have before had occasion to notice the fact, that atmospheric commotions, attended with electrical phenomena, have in almost all instances been observed to usher in a great pestilence. In lower Egypt, tempests attended with hail and thunder are not uncommon.

The eighth plague was the locusts. We have already adverted to the increase of insect life when epidemics prevail. In the instance now under consideration, they seem to have been brought in unusual numbers by an east wind, and carried off again by a west wind, which was of a very peculiar kind, known at present by the name "chamsin."

The darkness which overshadowed all the land of Egypt, probably arose from the blowing of this "chamsin" with great violence, attended perhaps with some electrical phenomena, as in the instance thus described by an eye-witness:— "The sun, without being veiled with clouds, had been shorn of its beams; it gave only a white and colourless light more feeble than the moon. A reddish dusky appearance filled the region. With wounded eyes and nose so filled that we could scarcely breathe, we strayed from one another, lost our way, and found our dwellings with great difficulty, feeling along by the walls. On the following morning, the same cloud of dust was driven in like circumstances along the Lybian desert. It followed the mountain range; and when we believed ourselves free from it, the west wind turned it back. Lightnings shot feebly through these dark clouds; all the elements appeared to be in commotion; the rain mingled with the lightning gleams, with wind and dust;

* Ozanam, Hist. Méd. des Malad. Epid. p. 87.

everything seemed returning to chaos and old night."* An old chronicle of the eleventh century records :—"There occurred a great and violent storm, accompanied by darkness. Edifices were destroyed and houses demolished ; moreover, Egypt was covered with so thick a darkness, that all believed the Resurrection had come."

In speaking of the year 1760, in which the plague broke out at Aleppo, Russell says :—"It may be added that the present period had been preceded by famine, by uncommon diseases, and by earthquakes ; a comet had been observed in the spring of 1759, and in the present year an eclipse of the sun—all which portentous events have ever, in the East, been considered as forerunners of a pestilence."

The following extract is taken from the *Times* newspaper of the 5th of May of this year, and the very curious phenomena described were coincident with a new outbreak of epidemic cholera :—"We make the following extract from a report of the proceedings of the Royal Dublin Society in a late number of the *Dublin Freeman's Journal* :—'Professor Barker presented to the notice of the Society a bottle containing a portion of black rain which had been transmitted to him from Carlow, with a view to satisfy the scruples of many persons who appeared to doubt that rain of this description had fallen. He had received communications on the subject from persons residing in several of the districts in which the rain had descended, and he was in a position to state, not only that such rain had actually fallen, but to mention the space of country over which it had been diffused. The specimen which he presented to the Society had been sent to him from Carlow, accompanied by a letter, in which the writer mentioned that at the time of its collection it was uniformly black, and resembled ordinary writing

* Denon, vol. i. p. 285.

ink ; but he (Dr. Barker) found that after allowing it to stand for a short period, the black colouring matter separated from the water with which it had been mixed, rendering the colour of the rain much lighter than at first. The places in which this phenomenon occurred were Abbeyleix, Carlow, Kilkenny, and Athy, from which it would appear that the black shower had extended over an area of more than 400 square miles. *As far as he had been able to ascertain, it occurred about six o'clock in the evening of the 14th instant, being preceded by such extreme darkness that it was impossible to read except by candle-light.* After this darkness had existed for some time, a hail-storm, attended with vivid lightning, but without thunder, occurred, and when this subsided, the black rain fell. It was mentioned by his Carlow correspondent, that upon examining a quantity of this rain just after it had fallen, he found it had an extremely fœtid smell, and a very disagreeable taste ; that it had left a stain upon some clothes on which it had fallen, and that cattle refused to drink it. At Abbeyleix and Athy, where the shower descended at the same moment, the appearance of the rain was precisely similar to that which fell in Carlow, but it was unaccompanied by the lightning which had been observed at the latter place. Dr. Barker then stated that as yet he had not been enabled to make a complete chemical analysis of the rain.' "

With reference to the tenth plague, which interests us most at present, we may quote the following observations from Hengstenberg :—"It may be proper to remark here, before we proceed with the tenth plague, that the phrase 'all the first-born,' must not be pressed too far. The whole tenor of the narrative is opposed to such a proceeding, and particularly the declaration, 'there was no house where there was not one dead,' since in every house there was not a first-born.

"If we take into view the time in which the last plague occurs, we cannot deny that we find something analogous to it in a pestilence described by Minotoli. It is not material whether it be allowed that the plague raged at so early a period, or that another similarly destructive disease existed in its place. The plague, he says, commonly makes its appearance at Cairo about the end of March or the beginning of April. The miasma is communicated merely by contact. Local causes, however, increase its malignancy; and even the prevailing winds have an important influence. *With an uninterrupted chamsin, the plague increases frightfully, and speedily takes off those who are attacked by it.*

"Compare also the 'description,' where, in accounting for the sickness, it is imputed mainly to the chamsin; and it is remarked, that great inundations, which leave numerous morasses, always precede destructive epidemics."

The sparing of the Israelites, wonderful as it undoubtedly was, is not without analogy. For example, in 1827, the inhabitants of Gooty suffered severely from the cholera; while the regiment which was there, and furnished guards to the town, enjoyed perfect health. On a sudden this was reversed; the soldiers were attacked, and the townspeople escaped.* And Cardem, in speaking of the plague at Basle, says, that it attacked only the Swiss, and spared the Germans, French, and Italians who lived in the town.† In the recent occurrence of the cholera at Tooting, the children were the only sufferers; probably, however, in this case from improper aliment and other reasons, which do not apply to the other instances of the same kind. There are several similar examples on record.

We may thus perhaps conclude that in the earliest of hu-

* Treatise on the Epidemic Cholera, by A. T. Christie, M.D. 1833. P. 15.

† Ozanam, Hist. Méd. dès Malad. Epid. Vol. i. p. 77.

man records, coeval with the Pyramids, there is preserved an epitome of the future history of great epidemics, which devastated nearly the whole earth ; and so far from divesting the wonders in the land of Egypt of their Divine significance and strictly miraculous character, it seems to us that by viewing these successive events as produced by the ordinary laws of nature, and converted into direct judgments by having been predicted and interpreted, and considering them as the type of all future pestilences, we shall see in these, too, a work of judgment and of mercy, not the less significant because there is now no prophet to foretell their approach and warn us of the particular offences they are meant to chastise, and no inspired historian to give the true meaning, as well as the faithful picture of the calamity. And possibly a more thoughtful consideration of the matter might bring us back to the mind of an elder age, when the moral laws of the universe were recognised as the true basis of the physical, and man's wellbeing and immunity from distress and misery were not rested on his obedience to the laws of this world alone. As in the time of Pharaoh, submission to the Word of the Lord was the only escape from the pestilence ; so in all future ages obedience to His Will, in its fullest sense, by all mankind, were it possible, could alone avert, by making unnecessary, those fatal, ever new epidemics which have so often scourged our race. In the words of the venerable Ambrose Paré on "Le vray et Souuerain remede contre la peste." "Et d'autant plus que ce mal est grand, d'autant faut il recourir promptement au remede qui est seul et general : c'est que grands et petits de bonne heure implorions la misericorde de Dieu par confession et desplaisance de nos forfaicts, auec certaine deliberation et propos de nous amender et donner gloire au nom de Dieu, cherchant en tout et par tout de luy obeyr et complaire

suiuant la saincte parole sans estriuer à l'encontre de luy par nos desordonées passions comme nous auons fait et faisons iournellement."*

There is one other curious circumstance connected with great epidemics to which we must briefly advert before leaving the general consideration of the subject, and it is the strange and powerful effect they have or had upon the minds of men. Scarcely had "the black death" subsided, when a delusion of the most extraordinary kind began to prevail. It was called the Dance of St. Vitus, and consisted in the performance of a succession of dreadful contortions of the body, attended with screaming and foaming at the mouth. It spread like a demoniacal possession over a great part of Europe. Instead of genuine devotion, the proper effect of a great calamity, we have its most hideous counterfeit, in an abandoned and most revolting superstition. It lasted for many years, and never since has reappeared as a general epidemic; although it has frequently prevailed in limited districts of this and other countries, and even yet it is not altogether extinct, occurring every now and then in the sporadic form.

How far the cause of such strange phenomena is moral, and how far purely physical, is an insoluble problem at present. We know that certain natures are very powerfully impressed by telluric influences,† and we have seen that

* Les Œuvres d'Ambroise Paré, &c., &c., p. 569. Lyons, 1641.

† We may give as an instance the following anecdote of Goethe, told by Eckermann :—

"*Thursday, Nov.* 13, 1823.

"Some days ago, as I was walking one fine afternoon towards Erfurt, I was joined by an elderly man, whom I supposed, from his appearance, to be some respectable citizen. We had not been long together before the conversation turned upon Goethe. On my asking whether he knew Goethe—'Do I know him?' said he with vivacity; 'I was his valet almost twenty years!' I begged to hear something of Goethe's youth, and he gladly consented to gratify me.

"'When I first lived with him,' said he, 'he was very active in his habits, thin and elegant in his person. I could easily have carried him in my arms.'

great epidemics were naturally preceded or attended by disturbances both of the earth and the sky. We may observe, in passing, that the Egyptian magicians who withstood Moses, were evidently believers in their own power to effect all he did. Egypt is still the land of magic; and to this day the traveller sees many strange sights which he can neither explain nor discredit. If some of these find their explanation in mesmeric phenomena, we may well believe that the subject of this mysterious influence is always strongly acted upon by the powers of the air.

I asked whether Goethe, in that early part of his life here, was disposed to gaiety. 'Certainly,' he replied, 'always gay with the gay, but never when they passed a certain limit; in that case, he became grave. Always working and seeking; his mind always bent on art and science; that was the way with my master. The Duke often visited him in the evening; and staid so late, conversing on literary topics, that I would get extremely tired, and long to have the Duke go away. One time he rang for me in the middle of the night. When I came up, I found he had rolled his iron trundle-bed to the window, and was lying there looking out upon the heavens. 'Have you seen nothing remarkable in the heavens?' asked he; and when I answered in the negative, bid me run to ask the same question of the watchman. He said he had not seen anything remarkable. When I returned with this answer to my master, I found him in the same position in which I had left him—lying in his bed, and gazing upon the sky. 'Listen,' said he to me, 'this is an important moment; there is now an earthquake, or one is just going to take place;' then he made me sit down on the bed, and showed me by what signs he knew this.

"I asked the good old man what sort of weather it was.

"'A cloudy night,' he replied, 'no air stirring; very still and sultry.' I asked if he believed there was an earthquake merely on Goethe's word?

"'Yes,' said he, 'I believed it, for I always found things happened as he said they would. Next day, while he was relating his observations at Court, a lady whispered to her neighbour, 'What visions are these of Goethe's?' But the Duke, and all the men present believed Goethe; and the correctness of his observations was confirmed in a few weeks, by the news that a part of Messina was on that night ruined by an earthquake."—Eckermann's "Conversations with Goethe in the Last Years of his Life." Translated by S. M. Fuller. Pp. 64-66. Boston, 1839.

ON EPIDEMIC CHOLERA.

CHAPTER I.

ITS MARCH.

India and some parts of China seem to have been the birthplace and home of cholera from the earliest ages; but until 1817, we cannot affirm with certainty that it ever assumed an epidemic character, or spread over other parts of the world. It has indeed been supposed that the plague which consumed the Israelites in David's time was this disease, and the following description quoted from Josephus by Christie may perhaps justify the inference :—"The prophet had no sooner received and reported David's answers, but the Israelites were seized with a most unaccountable distemper, that was still attended with certain death, and accompanied with accidents that baffled all the doctors either to find a remedy or reason; but they died, in short, one upon the neck of another, no one knew how. *Some went off with gripes and torments that despatched them in a trice; some with incurable faintness and languors, in despite of the physicians; others with vertigo, dimness of sight, suffocations,*

&c. The mortality was so great, in fine, that between break of day and dinner-time there were swept away by this pestilence seventy thousand persons.*

It is said to have ravaged Europe in 1600; and Ozanam gives the following quotation from Zacutus de Lisbonne,—"Anno 1600, quando hæc pestifera lues Europam fere totam oppresserat, observavi plures qui hoc diro dolore affecti venenosis symptomatibus excruciati, occubuêre omnes; nullus quartum diem pertransit. * * *

"Materia semicruda cum ichoribus multis ubertim qui per alvum et vomitum protrudit et multoties in tantâ copiâ ut ob exhaustum spiritum superveniant syncope, animi deliquia, virium jactura, pulsus ablati, intensissima sitis, convulsio, rigor, nervorum retractiones, aphonia, stupor, caligo oculorum, extremorum frigiditas, anxietas, angor, facies hippocratica et mors." (De Prax. Admirand. lib. ii. obs. 23 and xv.)

But at best these are but dim notices—more interesting to the antiquarian than to the practitioner; and we pass to clearer descriptions by writers of the present day.

In casting one's eye upon the map of India, it is impossible not to be struck with the watering of the great plain of the Ganges. Not only does the main trunk ramify on both sides as we track it upward towards its source, but instead of debouching by one large outlet, like rivers confined by barriers as in our own country, it splits into many fingers, as it were—each of which finds its own separate entrance into the sea. There are few plains in the world watered like the Delta of the Ganges. Here it was that in the summer and autumn of 1817, cholera burst out in various places simultaneously, destroying six thousand of the inhabitants of the town of Jessore, about eighty miles north-east from Cal-

* The works of Flavius Josephus, by Sir Thomas l'Estrange. London, 1702.

cutta ; and in a few weeks stretching from Sylhet on the east, to the extreme borders of Balasore and Cuttack, and reaching from the mouths of the Ganges, nearly as high as its junction with the Jumna. At this period, within an area of several thousand miles, scarcely a town or village escaped ; and so great was the mortality, that the bulk of the whole population was sensibly diminished. The large and populous city of Moorshedabad, however, situated in the heart of the conflagration, almost entirely escaped. It hardly crossed the Ganges—appearing on the eastern side like an exotic, which soon dies out.

Towards the end of autumn, instead of bursting out over the country as it had done, it began to travel in a given direction, and to confine itself within certain geographical boundaries ; and in its march, it encountered, for the first time, in the beginning of November 1817, the centre division of the British army, under the command of the Marquis of Hastings, near the banks of the Sinde : " It was here," says Mr. Jamieson, in the ' Bengal Report,' " that the disease first put forth all its strength, and assumed its most deadly and appalling form. It is uncertain whether it made its approaches on the 6th, the 7th, or the 8th of the month. After creeping about, however, in its wonted insidious manner for several days among the lower class of the camp-followers, it as it were in an instant gained fresh vigour, and at once burst forth with irresistible violence in every direction. Unsubjected to the laws of contact and proximity of situation, which had been observed to mark and retard the course of other pestilences, it surpassed the plague in the width of its range, and outstripped the most fatal diseases hitherto known in the destructive rapidity of its progress. Previously to the 14th, it had overspread every part of the camp, sparing neither sex nor age in the undistinguishing

virulence of its attacks: the old and the young, the European and the native, fighting-men and camp-followers, were alike subject to its visits, and all equally sunk in a few hours under its powerful grasp. From the 14th to the 20th or 22d, the mortality had become so general as to depress the stoutest spirits; the sick were already so numerous, and still pouring in so quickly from every quarter, that the medical men were no longer able to minister to their necessities. The whole camp then put on the appearance of an hospital. The noise and bustle, almost inseparable from the intercourse of large bodies of people, had nearly subsided; nothing was to be seen but individuals anxiously hurrying from one division of the camp to another to inquire after the fate of their dead or dying companions, and melancholy groups of natives, bearing biers of their departed relatives to the river. At length even this consolation was denied them; for the mortality latterly became so great that there was neither time nor hands to carry off the bodies, which were then thrown into the ravines, or hastily committed to the earth in the sheets in which they had expired, and even round the walls of the officers' tents. All business had given way to solicitude for the suffering. Not a smile could be discovered, not a sound heard, except the groans of the dying, and the wailing over the dead. Throughout the night especially a gloomy silence, interrupted only by the well-known dreadful sounds of poor wretches labouring under the distinguishing symptoms of the disease, universally prevailed. The natives, thinking that their only safety lay in flight, had now begun to desert in great numbers, and the highways and fields, for many miles round, were strewed with the bodies of those who had left the camp with the disease upon them, and speedily sunk under its exhausting effects." The army was moved on the 13th; and on the 19th encamped

on high and dry ground at Erich, where the pestilence soon entirely disappeared. The whole line of march presented a most deplorable spectacle; hundreds dropped down on the road, which looked like a field of battle, or the track of a defeated army. "The exact amount of mortality during these few calamitous days could not, from the circumstances of confusion and general disorder under which it took place, be ascertained with any degree of accuracy. From the military returns, however, it appears that in this fatal week, of 11,500 fighting men of all descriptions, 764 fell victims to the disorder; and of the camp-followers, it was conjectured that 8000, or one-tenth of the whole, were cut off."

This great mortality in our army naturally reminds one of the still more terrible destruction that overtook the Assyrians in the time of King Hezekiah. "And it came to pass that night, that the angel of the Lord went out and smote in the camp of the Assyrians an hundred and fourscore and five thousand; and when they arose early in the morning, behold they were all dead corpses." (2 Kings xix. 35.)

In the year 1818, the cholera advanced in a westerly direction as far as Kotah, a town situated on the eastern side of a range of high hills, which, as will be seen by casting a glance at the map, form the western boundary of the basin of the Ganges. Here it stopped; and there were no cases in Odneypoor or Ajmeer, which are the first considerable towns on the other side of the mountain range. The inhabitants of the country on this side congratulated themselves on having escaped the enemy, which had taken full possession of the whole of the valley beyond their rocky barrier. Their security was short-lived; for in July 1819, they were dismayed by the intelligence that their Prince had been attacked by

the disease in his palace, and his Prime Minister had died of it after a few hours' illness.

> "Pallida mors æquo pulsat pede pauperum tabernas
> Regumque turres."

It soon spread among the inhabitants of the town, where it committed dreadful havoc.

Before sketching its course through other parts of India, let us observe that after overrunning the district of country to the east of the hills as we have described, it halted for about eight or nine months, without the interposition of any *cordon sanitaire*—during all these nine months there was no impediment to the intercourse of the inhabitants. They went and came as heretofore, but the cholera remained. *It did not cross with the stream of human activity, but bided its time.*

In March 1818, it first appeared in Allahabad, situated at the junction of the Ganges and the Jumna, and swept off about 10,000 of its inhabitants; and a curious fact is, that the troops, though mixing freely with the townspeople, were not affected until the middle of the following July. Keeping close to the banks of the Ganges, it entered Cawnpore on the 8th of April. Passing over several intermediate towns, it attacked Shahanpoor in July, and destroyed 5000 of its inhabitants.

It extended up the river Jumna in the same way, desolating some places, while it spared others. It appeared in Matra as early as the beginning of June, while Agra, situated lower down, was not attacked till July. Agra is a dry, airy town, and it suffered little; Matra is filthy and crowded, and it suffered much. We may observe the principle of local election now coming into play. It committed great havoc at Delhi in July and August, and in Saharanpore in Septem-

ber and October. Here it again encountered another edge of the basin, and could not be traced over the mountains.

The Medical Board of Bengal, in a letter to that of Bombay, observes:—"The disease would sometimes take a complete circle round a village, and leaving it untouched, pass on, as if it were about wholly to depart from the district. Then after the lapse of some weeks or even months, it would suddenly return, and scarcely reappearing in the parts which had already undergone its ravages, would nearly depopulate the spot that had so lately congratulated itself upon its escape. Sometimes after running a long course on one side of the Ganges, it would, as if arrested by some unknown agent, at once stop; and taking a rapid sweep across the river, lay all waste on the opposite bank. It rarely, however, failed to return to the part which it had previously left. After leaving a district or town, it sometimes revisited it; but in such cases, the second attacks were milder, and more readily subdued by medicine than those in the primary visitation." The disease occurred in all seasons and weather, but changeable, damp weather seemed to favour it, and its progress was frequently arrested by a thunderstorm. Low, damp places were most liable to be attacked, and in such localities it has remained ever since its first appearance; so that there are places such as Gooty, through which if troops be marched, they are almost certain to suffer from the disease.

As our object is not to write a history of the diffusion of the cholera, but merely to narrate such facts as seem to us to cast a light upon the law of its progress over the world, we do not intend to follow its course farther in India, or to the East generally. Suffice it to say, that by January 1819, it had spread over the whole of the Indian peninsula; and by 1820, it had added Siam and Malay to its dark do-

minions. It occupied those countries, as it were, by prescriptive right; for in China, and over all India, it had long been at home as a sporadic disease. It was nothing new there, except in degree. Not so, however, as we trace its march to the West. Here it entered countries where it had never been seen before, and brought before the eyes of the inhabitants of Europe forms of death until then known only by tradition.

We left the cholera in 1819 at the western borders of Hindostan; it took two years to cross the intervening district between that and the other great eastern valley of the river Euphrates. In the summer of 1821, it raged with great violence on both sides of the Persian Gulf. At the town of Bussorah alone, it is said to have destroyed 14,000 people in fifteen days—nearly 1000 a-day! In September, it got as far as Shiraz, and committed great havoc; 6000, out of a population of 40,000, having died of it. Bagdad was attacked about the same time. Again it went into winter quarters, to resume its campaign the following summer of 1822. At this time the Prince of Persia, Abbas Mirza, was carrying on war against the Turks, on the high table-land near the source of the Euphrates, when both armies were attacked by this invisible foe, which proved more deadly than their mutual hate. Mr. Baillie Fraser gives the following account:—"The Prince pursued his success as far as the pass of Deear, about three days' march from Topra Kullali, when the epidemic cholera, which had appeared in his camp even previous to the action, now broke out violently, and he thought fit to commence a retrograde movement to Khooe. From that moment, the Persian army also appears to have been virtually dissolved. The men dropped off rapidly; and whole troops deserted to return to their homes; so that when he reached Khooe, he had scarcely any army to dismiss. The loss by disease was

estimated at about one-tenth of the whole force; although in some batallions 300 died out of 1000 men; and the rear of their line of march was strewn with dead bodies, as if it had been all the way in action!"—almost the words used to describe the condition of the British army, under the Marquis of Hastings, in similar circumstances. The description of the disease at Tabreez, by the same writer, is interesting:—"It is difficult to say how or whence the epidemic cholera, that scourge of the East, reached Tabreez. It was supposed to have come from Bagdad, along the caravan road by Hamadan and Sennar; but no accounts to be at all depended on could be obtained of its gradual progress. A whisper had gone forth that the disease had appeared in the town, as early as the 17th of July, but a week made it no longer doubtful; and upon our return to Tabreez on the 24th, after a short absence, we understood that from fifteen to twenty were daily dying of cholera.

"During the next ten days, the state of the distemper varied greatly; sometimes the fatal appearance diminished so much that it was doubted whether the alarm were not a false one. The sick were attacked with vertigo and sickness, which was attributed to the fearful effect of the sun's rays; and though some died, yet some recovered without having evinced many of these more peculiar and alarming symptoms which generally mark the disease." It is interesting to notice that, *there* as *here*, there was a premonitory morbid condition, indicating the approach of disease, and probably predisposing to it: but quite a different one. We direct attention to this now, as we shall have occasion to revert to the fact afterwards. To continue our description:—"By degrees, however, these symptoms disappeared; violent vomiting, accompanied with painful cramps, damp, clammy sweat, cold and bloodless extremities, burning heat

at stomach, a sudden death-like countenance, cessation of all the pulses: these, and other striking characteristics of this fearful disease, marked the fatal cases, and terminated in death.

"Often when the disease was at its height, the first seizure, indicated by vertigo, proved fatal at once. Several instances came to our knowledge of persons thus attacked in the streets, who fell down senseless, and never recovered."*

About the same time that the cholera raged along the shores of the Persian Gulf, it appeared at Mecca, Medina, Damascus, and Aleppo, having spread over a great part of Arabia. Its rapid progress across the desert is of remarkable interest. It takes months or even years to get over a mountain range, traversed by thousands of people with all their merchandise, and it crosses the great Arabian desert, where a human being is seldom seen, and all is death and stillness, in a space of time unappreciable from its shortness.

The eastern shores of the Mediterranean Sea, and the western shores of the Caspian, formed the extreme limits of its progress in 1823; and it then subsided entirely, and as it was hoped for ever. Nothing now was known of it for six years, so that it was not till 1829 that it suddenly broke out with its former violence in various parts of Persia. Again it subsided entirely during the winter months, but only to revive with great malignancy in the spring of 1830.

It broke out on the western shore of the Caspian Sea in June 1830, and committed great devastation in Georgia, confining itself chiefly to the towns situated along the valley of the river Kur, and extending by the beginning of August from Saliany, which is at the mouth of that river, to Tiflis, which is near the source. In this latter town, 238 persons died of it in six days, and the authorities gave the inhabi-

* Travels of Mr. Baillie Fraser, p. 316.

tants permission to take refuge in the Caucasian mountains, at the base of which Tiflis stands. We do not hear of it ravaging the country between the Caucasus and the Volga. The chain of mountains seem to have been an effectual barrier to its progress as they have often proved to the advance of the Russians from another quarter.

Instead of attempting to force the Caucasian passes, it crept along the shores of the Caspian to Astrachan, at the mouth of the Volga, where it arrived on the 1st of August, and numbered nearly a hundred victims a-day. It also extended along the rivers Terek and Kuma into the province of the Caucasians.*

By the 21st of the same month, it had got as far as Saratoff, still following the course of the river, and therefore advancing for a considerable distance in a *north-easterly* direction. Here it was very deadly, having within a month destroyed 2367 individuals.

Matters now began to look serious in Russia. The enemy had got into the country, and seemed disposed to march up the valley of the Volga; and if it did so, would soon arrive at the old capital of the Muscovite empire, Moscow, which was not prepared to re-enact the scene by which it had dislodged Napoleon. The Emperor of Russia seeing the alarming prospect, adopted those stringent measures for defence which his absolute authority enabled him to put in execution, in order to secure his great southern metropolis. Moscow, distant 1402 verstes from Astrachan, is situated on a table-land about 587 feet (French measure) above the level of the sea. On two sides of the town there run two rivers, which are connected by a canal, so as to form a triangular

* See "A Treatise on the Epidemic Cholera, containing its history, symptoms, autopsy, etiology, causes, and treatment," by Alexander Turnbull Christie, M.D., London.

island; this low-lying triangle embraces the larger part of the habitations of the poorer population, which consisted then of about 300,000 inhabitants. The city is surrounded by fortifications and barriers, so that access or exit is entirely under the control of the commandant, who has always a very large garrison to enforce his regulations. The first case occurred on the 14th of September, and the patient resided in the low triangle we have just mentioned. The man died on the 17th. On the same day, a soldier in the barracks, situated near this ground, took ill of symptoms resembling cholera; and likewise *a nun in a convent*, situated at some height above this piece of ground, was seized with the disease, and died on the 19th. Upon the 18th, a student attending the University was suddenly taken ill, and died in nine hours.

On the 18th of September, a *cordon sanitaire* was formed all around Moscow, and the most stringent measures were adopted to prevent the ingress of any persons or articles of merchandise from an infected district, until they had been subjected to a quarantine of fourteen days and the necessary purification; and as some cases had already occurred in the town itself, an order came out appointing a sanitary commission—dividing the town into districts, over each of which there was a "chef de quartier." Great powers were given to this commission, and a large sum of money was put at their disposal. They had orders to inspect, by means of proper officers, all the houses of the inhabitants, to establish hospitals wherever they thought fit, and generally to adopt such measures as were deemed advisable to arrest the progress of the incipient plague. We have no doubt that they did their duty; for a despotic power, such as Russia, enforces attention to its regulations in a very effective style. However, notwithstanding all these precautions, within seventeen

days the disease had developed itself in all the arrondissemens; 459 had been seized, and 178 had died. Towards the end of September, the disease was at its height, and nothing but despair was depicted on every face. It was on the 29th of the month, that, with a devotion which we must all admire, at a time when it was universally believed that the disease was highly contagious, and when all intercourse between the infected parts of his empire was cut off, lest his subjects should perish, the Emperor Nicholas himself came to Moscow to calm the alarm and raise the spirits of its inhabitants, and remained there till the 7th of October. This certainly is one of the most memorable royal journeys on record.

In the month of October, there were 5532 cases, of which 3107 were fatal; and among these were many persons of the highest class. In November, it began to decline, and continued to do so in December, when it seemed to pass into a kind of general influenza; and rheumatic affections, which are common at that season, began to prevail. The cholera abated steadily till March 1831, when it ceased entirely for a time, to break out again in the following summer.

On its first approach a manufacturer, who had fifty persons in his establishment, lost four by the disease; he immediately removed the rest to a house in a higher situation, and from that time, there was no other case.

The small town of Tcherkisowo, situated close to Moscow, and holding communication with it when the cholera was raging, was not attacked by it till the month of November. Thus it had lasted six weeks at Moscow, and committed dreadful havoc there before a single case occurred in this place, which lay at the very door.*

* Rapport sur le Cholera Morbus de Moscou, par F. C. M. Markus, Secrétaire du Conseil temporaire de Médicine, &c. &c. Moscou, 1832.

The total number of cases in Moscow was 6305, of which 3533 were fatal. The daily seizures at one time were about fifty, and the deaths about half that number. About the same time that it had reached Moscow by one route, it reached Odessa by another; but generally declined in the southern provinces of Russia, where it had shown itself during the winter of 1830. Having established itself on the borders of the Black Sea and Sea of Azof, it began to ascend the Danube in the winter of 1831, and appeared at Jassi on the 10th of May. By August it was in Vienna. While one division was thus penetrating into Europe by the south, another column, having set all the barricades of the Emperor Nicholas at defiance, forcing its way in a westerly direction, spread towards St. Petersburg in the north, and over the Carpathian Mountains into Transylvania, and Hungary, and Poland towards the south. It attacked the towns of Brody and Cracow during that summer, and spread generally over Galicia. In Hungary, it was computed that about 19,000 persons fell sick, of whom 8266 died. We cannot trace its progress minutely from place to place throughout the extensive plains of Poland: it seems to have spread over them as the hordes of barbarians in a former age may have done, following no geographical lines, but occupying all the thickly peopled districts.

Advancing to the north, it arrived at St. Petersburg on the 25th of June; and here it changed its course, and went down the Gulf of Finland in a south-easterly direction. It entered Prussia by way of Castrin, Riga, Posen, and Stettin, and occupied Berlin on the 31st of August 1831; and about the beginning of October, it made its appearance in Sunderland.* It made very little way in England during

* Clanny on the Cholera of Sunderland.

that year, and had entirely subsided by the 2d of January 1832.

Having traced the cholera thus far to its invasion of our own island, we shall not follow it any further in Britain, but return to the Continent of Europe.

It broke out in Paris upon the 27th of March 1831, and from that date to the beginning of August it had attacked 26,300 persons. The total number of persons attacked in France, where it spread generally in 1833, destroying the fish and the fowls as well as the human race, was estimated at 229,534 individuals, of whom 94,626 died.

It did not reach Marseilles and Toulon till 1835.*

We have now with considerable minuteness traced the march of the cholera from the banks of the Ganges to the shores of the North Sea ; and before offering any general reflections upon the facts we have brought together, we shall advert to the course of the epidemic on its recent occurrence ; and we shall do this very shortly, for it would serve no purpose to go over exactly the same ground we have just quitted. In the words of a writer in the British and Foreign Medical Review for January 1849 :—

" The disease always followed frequented routes and water-courses on which navigation was active, equally in 1847 as in 1830. The governments which were most exempt in 1830-31 were this time also less severely attacked.

" In the winter, the cholera lessened or disappeared ; it reappeared with the first warmth of spring. In all these particulars the cholera of 1847 has manifested a singular conformity with the laws which seemed to govern it in 1830. In comparing the dates of attack in different governments, in the two epidemics, some very striking analogies are discovered. The following table of the principal cities of the govern-

* Ozanam, Op. Cit., p. 264.

ments, and of the dates of attack in 1830 and 1847, is given by M. Lasègue :—

	WHEN ATTACKED.	
	1830.	1847.
Tiflis	July 1st	May 5th.
Kislar	Middle of July	End of May.
Astrachan	July 31st	June 21st.
Zaritzyn	August 13th	Middle of August.
Saratoff	August 20th	August 25th.
Zimbirsk	September 8th	September 15th.
Kazan	October 4th	September 17th.
Georgiew	End of July	End of June.
Stawopol	September 6th	July 16th.
Novo-Tscherhask	September 10th	July 13th.
Taganrok	October 8th	August 15th.
Kiew	January 8th	October 5th.
Mohilew	End of January	October 18th.
Karkhoff	September 23d	August 23d.
Woroneseh	End of September	September 5th.

"Too much stress must not be laid upon these coincidences, curious as some of them undoubtedly are. Moreover, we find important exceptions. Odessa and Orenburg, also, both suffered at periods differing from each other, in the two epidemics.

"In the further progress, there are also some singular coincidences. Thus cholera appeared at Moscow in the beginning of October 1830; at the end of September 1847. It appeared at St. Petersburg on the 25th of June 1831; and in the beginning of June 1848. The first cases occurred in Berlin on the 31st of August 1831; about the 12th of August 1848. In our own country the coincidence has failed, for cases of cholera have already occurred in places situated in all parts of the kingdom, from Edinburgh to Plymouth, within a short space of time."

Having tracked this deadly visitant round half the globe, we naturally come to inquire by what force it has been impelled, and by what conditions it has been limited or directed.

We may be able to arrive only at negative conclusions on this subject, but that is always nearer the truth than positive error.

Did it advance from India hither by contagion? Let us first look narrowly at the meaning of the affirmative answer to this. Supposing one person has a disease, and another person, previously well, touches him, and takes the same disease, and in his turn, comes in contact with another, and another, and another, and they all take it, and in their turn give it to all they meet—then that disease is spreading by contagion. In doing so, it will tend to spread in circles, like ripples from a stone thrown into the water, augmenting as they retire from the original centre of disturbing force. The circular form will be retained as long as there is surface enough of water to afford room for a complete circle, and when it comes in contact with a bank, then the waves will be in segments of circles. They never can lose altogether their tendency to a circular character. The same is the case with a disease which advances by contagion alone. It should spread in ripples among the population where it first appeared, and gradually enlarge the circumference of its sphere until it had embraced all who were susceptible of its influence. The only determining condition would be the density of the population; it should spread more rapidly in a dense than a sparse community. It never could spread at all where there were no people, any more than a fire could spread without fuel. It would always be found along the line of human intercourse, and nowhere else. It would go from place to place with men—whether they went by ships, by canals, by railway, or go how they would, if it spread by human contact, they could no more get rid of it than can a villain get rid of his guilty conscience by change of place. It would attend man like his shadow. Such are the obvious

conditions of a disease which owes its power of advancing to contagion. Let us try whether they suit the cholera.

The overland mail from India takes about six weeks to reach this country. The cholera took thirteen years. It would hardly have suited Sir Charles Napier to have been so long on the road.

When it first broke out in Hindostan, it spread like fire over a dry prairie, but did not cross the Ganges. We have no means of knowing how many thousands crossed that river and travelled east during the time the plague was ravaging the plains of the west. The numbers must have been immense; they went from the cholera—they did not take it with them. It ran up the Ganges and up the Jumna; it missed some towns and assailed others; there was no barrier to the intercourse between the places where it raged and those which were exempt, and yet it did not spread laterally—it kept in a given direction. It attacked the British army, and thousands died. The army decamped with the disease in its bosom, and when it had removed to a little distance from its former location, the disease subsided. When it got to the hills west of the basin of the Ganges, it stopped for the winter; during all that time, men, women, and children were pursuing their pilgrimage to the west, and yet it went not. When it had stopped the operations of the Persian army at the sources of the Euphrates, the disbanded army, many of whom were sick of it, did not diffuse it in the country they occupied. It crossed the Desert, where the Israelites wandered for forty years, like a flash of lightning —appearing simultaneously on its east and west border. It continued, notwithstanding the Emperor's stringent measures, as regardless of them as was the sea of the satyrical interdict of Canute, to advance step by step over his broad dominions, sometimes creeping slowly up a river, and sometimes

traversing the wide plains swifter than the fleet Cossacks, who are their only inhabitants. It convinced those who had most to do with it, that it was altogether in vain to attempt to arrest its progress by quarantine measures.* Seven hundred and sixty vessels arrived from places where cholera was raging, at different ports of Britain, and not a case occurred on board the vessels, or at the quarantine stations outside the Categat Sea.† It did not go where men were thickest ; it went fastest where there were no men. It therefore did not advance by contagion. We do not say that it is not contagious ; on the contrary, we intend to reserve the discussion of that for the next Chapter ; but we say that the hypothesis of its contagiousness never could be made to account for its course from India to this country.

The few conditions of its progress that we have become acquainted with are the following :—It has a decided affinity for water. By casting a glance at the map which accompanies this volume, this will be recognised at once. It has a strong tendency to run up rivers, even to their very source. It frequently declines in winter, to revive with the approach of summer. It is most fatal in large, low-lying towns. It passes rapidly over plains ; it finds difficulty in getting over hills. It has hitherto confined itself to certain parallels of latitude. Its progress is generally most rapid in autumn, and its course is in a westerly direction.

These are nearly all the unquestionable facts taught us by its two successive invasions of Europe.

The next question we come to discuss is a most obscure one. It is this. Since contagion fails to account for the progress of cholera all round the world, by what force is it

* See the Report of the Moscow Board of Health.

† Documents transmitted by the Central Board of Health to the Privy Council, 1832.

impelled? To this we shall not venture any answer, but throw out the few suggestions which have occurred to us in the course of our reading and meditation upon the subject.

There is something very dreadful in the idea of an infected atmosphere. Against poison in other forms we can guard. We can analyze our food, and even for a time abstain from eating. But we must breathe or die; and it is a frightful alternative to know that if we do breathe, we must also die. Yet so it is. The viewless, scentless, impalpable air, the breath of life, is sometimes charged with a poison so powerful that no organism can withstand its baneful influence, and yet so subtle that no chemistry can detect its presence. No wonder that when this is known to be the case, a most anxious investigation of all atmospheric phenomena should be made, and everything which was supposed to be unusual about these, should be associated with the taint which affected the air. As yet we might report upon this department of the subject in the words of Lord Bacon:—"Spe fallente, progressu haud prospero, fructu parco et exiguo, cum contemnendo aut plane nullo successu."

This much is certain, that there must be "something in the air" when the cholera rages. It is *in the air*, for it affects the aerial inhabitants. When the cholera came to Petersburg, the crows forsook their old roosting-places, and the swallows their nests, and disappeared altogether during the time it was there.* Yet it was not *of the air*, for it has been observed not to be affected by wind; and indeed in

* Einige Bemerkungen über die Asiatische Cholera, für Ærzte, nach eigener Erfahrung gesammelt auf einer zur Beobachtung des übels unternommenen Reise, von C. Müller, Dr. Med. Hannover, September 1848. Also, Observations on the Asiatic Cholera, by Adair Crawford, Esq., M.D., Metropolitan Sanitary Commission. As we shall have occasion to refer to these pamphlets again, we may here observe, that Dr. Müller was sent by the Hanoverian, and Dr. Crawford by our own Government, to investigate the cholera in Petersburg, and these are their "Reports."

some places, as Russia, it seemed to prefer moving always against the wind.

Although in the present state of meteorology, when we cannot even predict whether the morrow will be wet or dry, hot or cold, it would be absurd to expect anything approaching to a scientific reply to the question which every one puts, —What is it in the air which causes this or any other fatal epidemic? yet a few positive observations have been made which seem to establish as a fact, that during the prevalence of cholera, there often is *a* disturbance of the ordinary atmospheric phenomena. We shall select a few examples of such observations ; and as the reports about weather are generally framed in a very loose style, lest we should make bad worse by giving an incorrect account of these reports, we shall employ the words of the observers themselves. Our first authority is Dr. Prout :—

" The matters occasionally diffused through the atmosphere, which appear to be *in a state of solution,* are not often perceptible by our senses, unless in some cases, perhaps, by the sense of smell.

" As an instance of the presence of such bodies in the atmosphere, we may mention a very remarkable observation which occurred to the writer of this treatise during the late prevalence of epidemic cholera. He had for some years been occupied in investigations regarding the atmosphere ; and for more than six weeks previously to the appearance of cholera in London, had almost every day been engaged in endeavouring to determine, with the utmost possible accuracy, the weight of a given quantity of air, under precisely the same circumstances of temperature and of pressure. On a particular day, the 9th of February 1832, the weight of the air suddenly appeared to rise above the usual standard. As the rise was at the time supposed to be the result

of some accidental error, or of some derangement in the apparatus employed, in order to discover its cause, the succeeding observations were made with the most rigid scrutiny; but no error or derangement whatever could be detected. On the days immediately following, the weight of the air still continued above the standard, though not quite so high as on the 9th of February, when the change was first noticed. The air retained its augmented weight during the whole time these experiments were carried on, namely, about six weeks longer. The increase of the weight of the air observed in these experiments was small; but still decided and real. The method of conducting the experiments was such as not to allow of an error, at least to an amount so great as the additional weight, without the cause of that error, having become apparent. There seems, therefore, to be only one mode of rationally explaining this increased weight of the air at London in February 1832, which is, by admitting the diffusion of some gaseous body through the air of this city, considerably heavier than the air it displaced. About the 9th of February, the wind in London, which had previously been west, veered round to the east, and remained pretty steadily in that quarter till the end of the month. Now, precisely on the change of the wind, the first cases of epidemic cholera were reported in London; and from that time the disease continued to spread. That the epidemic cholera was the effect of the peculiar condition of the atmosphere, is more perhaps than can be safely maintained; but reasons which have been advanced elsewhere, lead the writer of this treatise to believe that the virulent disease, termed Cholera, was owing to the same matter that produced the additional weight of the air."

Dr. Clanny, "Medical Member of the Board of Health" at London, writes in 1831 :—"We had several severe thunder-

storms, and consequently sudden changes of the weather, in the months of September, October, and November. The commencement of the epidemic cholera was, according to my personal observation, about the beginning of the month of October; and I find in my memoranda of cases, that on the night between the 2d and 3d of November, much lightning occurred; and it is worthy of remark, that exactly at this time, our first five fatal cases were drawn up and reported to the Board of Health at London. Upon the 2d of November, we had no new cases; nor upon the 3d, 4th, and 5th; but upon the 6th, we reported six new cases, and two deaths; and upon the night between the 6th and the 7th, we had continued flashes of lightning during the whole night —an unusual phenomenon at this season of the year."*

"Unnatural times do breed unnatural troubles."

Dr. Müller, speaking of St. Petersburg during the present epidemic, observes :†—"The air, during the whole time of the presence of the cholera here, was oppressive, heavy, and very changeful in its degrees of temperature. There were frequent thunderstorms, but they had no influence in making people ill or restoring them to health. [A bold assertion!] Rain fell almost daily. The sky was gloomy—very misty in the evening; the sun seldom broke through. The depressing influence, (die muthlose Stimmung,) the peculiar constitution of the atmosphere acted, more or less, upon every one; almost without exception, all experienced a certain

* Hyperanthraxis, or the Cholera of Sunderland, by W. Reid Clanny, M.D., F.R.S.E., M.R.S.A., Physician to H. R. H. the Duke of Sussex, &c. &c. We give some of his titles to show that he is a man of learning and standing; for at first sight it seems odd to invent a special Greek name for the "Cholera of Sunderland." It would be a curious Babel-language, if every town where the cholera appeared returned a Greek member of the medical *parlement* (to adopt the old spelling).

† Op. Cit., p. 5.

feeling of discomfort, weariness, pressure at the pit of the stomach, and tearing pains on the lower limbs." Our last quotation shall be from Dr. Crawford's Report, p. 5 :—

"STATE OF THE WEATHER IN RUSSIA IN 1848.

"The last winter in Russia was dry, moderately cold, and the fall of snow much less than is usual. The spring set in very early, the Neva being clear of ice, and the navigation open nearly a month sooner than is generally the case. The weather was fine and dry, and the temperature mild, in March, April, and the beginning of May. There was a great prevalence of severe influenza, complicated with sore throat, in February and March ; and in April and May, the number of cases of intermittent fever, and also of diarrhœa and dysentery (complaints generally prevalent at that season), was greater in the hospitals than in ordinary times. During the latter end of May and the whole of June, a remarkable change took place in the weather. There were almost constant high winds, shifting frequently and suddenly round to every point of the compass, and often accompanied with torrents of rain, and sometimes thunder. This disturbed state of the atmosphere was indicated by sudden fallings and risings of the barometer, sometimes to the extent of between one and two inches. The changes of temperature were equally frequent and rapid ; the heat being, for several days together, very great, as high as from 84° to 90° of Fahrenheit, and the air extremely sultry and oppressive, with a damp relaxing south wind ; and then suddenly, on a change of wind, and sometimes on the occurrence of a thunderstorm, this oppressive heat would be succeeded by great cold, the thermometer falling as much as 50° in a few hours, so that it was several times in June nearly as low as the freezing point.

"Another peculiarity in the condition of the air was the

disturbed state of its electricity. This was clearly demonstrated by the fact, that the electric machines could not be charged, and to a great extent lost their power, as generally happens whenever the atmosphere is damp and unsettled. The same remark was made respecting the strength of several large magnets; and it has been reported since I left St. Petersburg, that the weather having become more settled, the electric machines and magnets have recovered their power. This disturbed condition of the electricity of the air was also indicated by the peculiarly depressed and uneasy state of feeling which almost everybody complained of more or less; some entirely losing their sleep, whilst others slept more heavily than usual. Few persons, in fact, during that period, escaped suffering from some degree of derangement in their health."

Dr. Crawford's last observation in regard to the electric phenomena is very interesting, for to this point we naturally turn for some light upon the mysterious influences which pervade the atmosphere during the prevalence of any deadly distemper. We find that thunderstorms have frequently been observed to attend epidemics; we know that our frames are powerfully affected by the electric condition of the air; and further, while the positive electricity decreases from sunset, and reaches its lowest point between sunset and sunrise, it has been observed that persons are generally seized with cholera in the night-time.*

The intimate relation of electricity to magnetism in all its branches, naturally leads us to the researches of Reichenbach; and certainly it is a very curious fact, that sensitive persons, and they alone, should be affected by the current which is always in the line of the magnetic meridian. We

* Markus, op. cit., p. 104, who quotes Delanay's Memoirs in corroboration of this remark. Also Orton, and Scot, and many other observers.

shall quote at some length the observations of Reichenbach upon this subject:—

" 59. Having detected in crystals a force, which, although quite different from magnetism, yet exhibited a very marked analogy with it; and considering, on the other hand, that animal magnetism, although likewise different from ordinary magnetism, yet showed a similar analogy to it, he was led to inquire, whether he could discover any common properties in the phenomena of these two forces, and to what extent? And also, whether animal magnetism, like the crystalline force, might not be subject to physical laws? As crystallization seems to mark the transition from organic to inorganic nature, he ventured to hope, that by experiment he might discover a point of connection between animal magnetism and physics, or perhaps even obtain, for animal magnetism, that firm foundation in physics which had so long been sought for in vain.

" 60. But to prepare the way, it appeared, above all things, necessary to ascertain the part which in all these phenomena is played by terrestrial magnetism. If a magnet or a crystal produces so decided an effect on sensitive persons, it is certain that the magnetism of the earth, which gives the needle its direction, cannot be without influence on the animal nerve. And thus it was obvious, that it would be impossible to obtain any pure result from any experiment as long as this powerful agent, which must act in some way, was not subject to measurement and calculation, with a view to its elimination. With this idea, trials were made with both healthy and diseased individuals, as M. Schuh, M. Schmidt, surgeons; Mdlles. Nowotny, Sturmann, Maix, Reichel, Atzmannsdörfer, and others, in different circumstances and at different times.

" 61. M. Schuh had, in the house then inhabited by him,

the singular custom, when he awoke early in the morning, of regularly turning himself in bed, so as to place his head where his feet had been ; on doing this, he invariably fell asleep again, and this second sleep, contrary to the usual opinion, was to him far more refreshing than the whole sleep preceding it. If he omitted this, or lost his second sleep, he felt weary all day, and thus this strange custom had become a necessity for him. The author inquired, and found that the position of the bed was such, that the head of the sleeper, in his ordinary position, that is, the head of the bed, was directed to the south, the feet to the north. He advised the turning of the bed into exactly the opposite position, with the head toward the north ; and from that time, the necessity for the second sleep never returned, the ordinary sleep was refreshing and sound, and the custom above mentioned at once given up.

" 62. M. Schmidt had experienced, in travelling, a chill in the right arm, and had suffered for some time from violent rheumatism, with most painful cramps, from the shoulder to the fingers. He was treated by his physician with a magnet, which relieved the cramps, although they always returned. He lay then with his head to the south ; on the position being reversed, so that he lay in the magnetic meridian with his head to the north, he immediately felt comfort and relief. Instead of shiverings, he now felt an agreeable uniform warmth, the passes with the magnet were now much more cooling and beneficial than before ; and before the author left him, the stiffened arm and fingers were quite moveable, and the pain had disappeared.

" 63. On examining the position of Mdlle. Nowotny, she was found lying almost exactly on the magnetic meridian, her head towards the north. She had instinctively chosen this direction, and it had been necessary to take down a stove to

allow her bed to be placed as she desired it to be. She was requested, as an experiment, to lie down with her head to the south. It took several days to persuade her to do so, and she only consented in consideration of the weight which the author attached to the experiment. At last, one morning he found her in the desired position, which she had assumed very shortly before. She very soon began to complain of discomfort, she became restless, flushed, her pulse became more frequent and fuller, a rush of blood to the head increased the headach, and the sensation of nausea soon attacked the stomach. The bed with the patient was now turned, but was stopped half-way, when she lay in a magnetic parallel, with the head to the west. This position was far more disagreeable than the former; indeed, absolutely intolerable. This was at half-past eleven, A.M. She felt as if she would soon faint, and begged to be removed out of this position. This was done, and as soon as she was restored to the original position, with the head to the north, all disagreeable sensations diminished, and in a few minutes were so completely gone, that she was again cheerful. But besides these very disagreeable feelings which acted profoundly on her, in the altered position, all her sensations, in regard to external matters, were altered. For example, the streaking with a magnet, usually so agreeable, was now disagreeable; and if strong, intolerable; and, in short, all her relations to different substances took a new and very different form.

"All these experiments were at different times repeated, and with exactly the same results. She could hardly endure the position from west to east, or that from east to west, more than a minute, without feeling all the symptoms above described, with a tendency to syncope, and recovered instantly when the position was changed to that of north to south.

" As she had long been affected with a gradually increasing illness, the author inquired if at any former period this sensibility to position had occurred; and it appeared that she had lived in different houses, and had suffered uneasiness in some, while in others she had felt comfortable, without the cause being known. Her brother was now told to take a compass and ascertain the position of her beds in the different houses, as well as of her couches and work-chairs. It was found that in one house her bed and couch had accidentally been almost exactly in the magnetic meridian, and that she had lain with her head towards north, not towards south. In another house she had lain in a line north-east and south-west. In fact, she had been comfortable in the former, while in the latter she had always suffered and struggled with illness. Even now, without knowing why, she could not bear to sit across her bed or sofa, neither could she lie on the sofa, but could only bear to lie in bed. In the first case her position was from west to east, in the second east to west, in the third south to north; only in the last could she obtain the indispensable position from north to south.

" Of all positions, the worst by far was that from west to east, that is, the head to the west.

" 64. Mdlle. Sturmann, in consequence of violent dancing, 3 years before, was attacked by her illness. She now suffered from tubercles in the lungs, and was subject to cataleptic attacks. The author found her lying in the position from west to east. In this position, the great magnet (carrying eighty lb.) placed above her head or under her feet, had hardly any effect. She was then placed in the position from north to south. The change was instantaneous. The patient at once expressed a feeling of comfort, the previously existing restlessness ceased; a painful sensation of heat in the eyes, which had constantly annoyed her, disappeared,

and in its stead she felt an agreeable coolness ; a universal relief obviously spread over her whole being. Then followed a night of singularly sound sleep, such as for a long time she had not had. Another time the position from south to north was tried, with an equally rapid change for the worse: general restlessness, flushing, oppression of the head, and burning sensation in the eyes, at once returned; and all were, so to speak, as easily put an end to as soon as the patient again occupied the position from north to south. While she was in this, the normal position, the author again tried the magnet. But what a change! At the distance of four paces from the head, he removed the armature of the magnet. The patient did not speak, and was found insensible and affected with tonic spasms. After her recovery, he again, at seven paces from her feet, removed the armature, and she had hardly spoken a word when she became speechless, and fell again into the same state. A third time he went, in the line of the magnetic meridian, as far as the ward permitted, upwards of thirty feet from her feet. When the armature was removed, she did not instantly feel anything, but after about a minute she ceased speaking at once, in the middle of a word which was actually on her tongue. She was suddenly seized, and was found lying in convulsions, with clenched hands, her eyes open and turned upwards ; so unconscious that he could lay his finger on the cornea without her moving the eyelids. What a difference of effect! The same magnet which had been placed above her head and under her feet without any marked action, while she lay in the line of a magnetic parallel, now when she lay in the meridian, struck her down senseless at the distance of thirty feet.

"65. Mdlle. Maix, who was neither cataleptic nor somnambulist, gave similar results ; she could only endure the position from north to south, and that from west to east was of

all the most intolerable. In her case, the experiment was tried in the afternoon, while with Mdlle. Nowotny, it was in the forenoon.

"66. Mdlle. Reichel also perceived a very marked difference: and as the author found her bed in the position from south to north, he recommended a change to that from north to south. From this change she derived much benefit, her rest being much improved.

"67. Mdlle. Atzmansdörfer, on two occasions, one in the morning, the other in the evening, could only bear the position from north to south, and found that from west to east the most disagreeable.

"68. All these patients now recollected how painful and disagreeable it had always been for them to remain in church, although they could never tell why. But as all Catholic churches are built from east to west, those in front of the altar are necessarily in the position from west to east, which to all sensitive persons is the most intolerable. In fact, these patients, in that position, had often fainted and been carried out of church. At a later period, Mdlle. Nowotny could hardly ever bear to walk in the garden or on the street from west to east, if it lasted for some time.

"69. Thus, eight different cases of sensitive individuals agreed in this, that every other position, except that from north to south, is highly disagreeable, but that from west to east almost intolerable, at least in our hemisphere. Probably in the southern hemisphere it is otherwise. The cause of these phenomena can obviously be found only in that great magnet which is formed by the earth with its atmosphere, that is, terrestrial magnetism. Like any other magnet, the earth interferes, and we thus arrive at the following law:— The terrestrial magnetism exerts on certain persons, both healthy and otherwise, who are sensitive, a peculiar influence, powerful enough to disturb their rest, and in the case of dis-

eased persons disturbing the circulation, the nervous functions, and the equilibrium of the mental powers."*

Let it not be supposed that we wish to identify the morbific force which produces cholera with electricity or magnetism in any of its forms. Our only design is to direct attention to the remarkable fact that there is *constantly* in the atmosphere a subtle force moving in a given direction, which has the power of affecting with severe illness persons peculiarly susceptible to its influence, and that thus it offers a closer analogy than any other constant natural force with the peculiar morbific influence we are now considering.

Before leaving this part of the subject altogether, we are tempted to add one observation. It has been remarked by various writers that the electric force in all its various modifications is the great antagonist to the force of attraction. The one is, to borrow a phrase from political life, the conservative and the other the radical power. Attraction holds things together, binds the planets to their suns; the electric force gives life and activity to the materials of which all matter consists. Neither vital nor chemical action can go on without it. The course of the earth, in obedience to the general law of gravitation, is from west to east, the course of epidemics is from east to west.

Again, we disclaim any intention of building a hypothesis, but we throw out these random hints in the hope of stimulating the curiosity of observers, and inducing them to direct their investigations in the direction where we have most hopes of discovering the laws by which the mother earth, with its mantle of air, " its glorious canopy of light and blue," is so intimately united with all that dwell upon its surface.

* Abstract of "Researches on Magnetism and on Certain Allied Subjects," including a Supposed New Imponderable. By Baron von Reichenbach. Translated by William Gregory, M.D., Professor of Chemistry in the University of Edinburgh.

CHAPTER II.

IS IT CONTAGIOUS?

We have done with the march of cholera from India to Britain, and we now come to speak, not of its progress, but of its diffusion. This is not only a different question but one which requires an opposite method of investigation. As an illustration, let us suppose that we wished to explain such a phenomenon as this. A wind is observed to blow always in a given direction from south-east to north-west, and this wind is of a peculiar quality, and as it proceeds on its course, it spreads to a certain extent through the surrounding atmosphere. In seeking to determine the force and direction of this moving column of air, we must take the measurement of the earth as the basis of our calculation, and we may arrive at the conclusion that the phenomenon is caused by the difference in the velocity of the atmosphere at the poles and at the equator; but this does not bring us a step nearer the explanation of its diffusion. To ascertain this we must make a series of experiments, as well as observations, and by doing so in the laboratory we may arrive at the knowledge of the law that gases tend to intermingle with one another in the inverse ratio of their density. The knowledge of this latter law would not at all assist us in explaining the trade-winds, any more than would the trade-winds explain the diffusion of gases. So

it is with the question now opening to us. In tracing the march of cholera, we sought as high a point of view as possible, that we might survey an immense extent of the earth's surface, and estimate aright the strides of the destroying angel. This was absolutely necessary, when many degrees of longitude intervened sometimes between his footsteps. It was like following the course of some mighty conqueror with a telescope from a point far above the earth. To determine the important question of the contagiousness of cholera, we must track it from house to house, from room to room, from bed to bed. We must prepare ourselves for investigating the most minute particulars, like a police-officer. The one would be the task of a Fouché, the other that of a Humboldt.

We want to make out whether the cholera is contagious or not. Let us first distinctly understand what we mean by contagious. Suppose a person has got small-pox, and six other persons attend him, and two of the six on going home fall ill of small-pox, and six persons attend each of them in their separate abodes, and again two of each of the six take the disease likewise, and so on until it is a notorious fact among the community that a person who has been in attendance upon another having small-pox, is more liable to be attacked by the disease than his neighbours, who do not come in contact with persons so affected; then we say that small-pox is contagious.

The simple common-sense view of the matter is, that communication with the sick gives a liability to the particular disease they suffer from. Nobody says that contact with the sick is the only way of getting the disease, otherwise how did the disease first begin? There must have been a first case of every disease; and unless we suppose that Adam on his expulsion from Eden was immediately smitten with

all infectious diseases—which is hardly compatible with his maintaining himself and Eve by his exertions, and founding a family which has lasted for six thousand years—some one of the human race must have become spontaneously ill of a disease which afterwards he gave to his neighbours.

Here, then, is the first stumblingblock—a disease may be contagious, and yet arise without contagion. There is little doubt that typhus fever is contagious, and as little that it attacks persons in certain localities who have not been exposed to contagion.

The next ambiguity we encounter is, that contagion is almost never universal. If it were so our race would have been extinct long ago. Only certain persons are liable even to the most contagious diseases. There are many examples of heroic exposure to "the plague," both by physicians and priests, many of whom escaped the disease; so that we can hardly conceive a more senseless proceeding than experimenting on oneself with a disease reputedly infectious; as for example, wearing the clothes of persons who had died of cholera, or sleeping in the bed of a cholera patient, and then if no bad consequences followed, holding that up as a proof that the disease is not contagious. It only proves that the very foolish individual happened not to be liable to its influence.

We start then with these preliminary assertions, that diseases of the most certainly contagious character occur without contagion, and that all persons are not liable to any, even the most virulent contagion.

Before investigating the facts which bear upon the contagion of cholera, we propose giving a summary of those which bear upon the contagion of plagues, that we may have a sort of model before our eyes; and for this purpose we shall take as an example the plague at Marseilles, in the

year 1720, as affording useful instruction in all the points we hold it of importance to bear in mind. Our chief authority is Russell's History of the Plague, and when no other work is referred to, this clear and able narrative is the source of our information.

According to Dr. Russell, (the author of the History of Aleppo,) the plague raged with unusual violence in Syria in the year 1819; and, as is usual in such circumstances, great numbers had fled to the coast, and the sea-port of Sidon was almost certain to have many of the infected among its visitors. It actually broke out there in the beginning of February 1720. A few days before its outbreak, upon the 31st of January, a ship, laden with the usual spoils of the East, left the harbour, having a clean bill of health, and destined for Marseilles. Having sustained some damage from storms, she put into Tripoli, where she was repaired, and took in some Turks and merchandise. Soon after she left Tripoli, one of these passengers fell ill, and died. Two of the sailors prepared to throw the corpse overboard, but desisted at the desire of the captain, and left the ceremony to be performed by some Mohammedan passengers. They had touched the body, however. Within a few days both the sailors were taken ill, and died. The ship touched at Cyprus, and landed her remaining passengers, glad to escape, no doubt. Soon after leaving Cyprus, another sailor and the surgeon died very suddenly. Before reaching Leghorn, three more sailors were taken ill, where they were landed, and soon afterwards died. We have thus seven deaths among the crew of a trading vessel in the course of a few weeks; that vessel being come from a port where the plague was *known* to rage a few days after the ship had quitted it. There cannot be a doubt as to the dreadful character of this vessel's freight now. Notwithstanding her clean bill of health, the plague

was on board; and Captain Chataud, who commanded her, kept himself aloof from the rest of the crew, and had all the bedding of those who died destroyed. He, at least, was of opinion that this fatal disease was contagious.

While this ship was making its voyage down the Mediterranean, the town of Marseilles was in its usual state of health, and little aware of the dangerous cargo to which it was opening its ports.—" Two days after the arrival of this ship, one of the sailors died; on the 12th of June, an officer of quarantine, who had been put on board, died also; and this was followed by the death of a cabin boy on the 23d. About the same time, some porters employed in opening the merchandise, in the Lazaretto, were taken ill, and died; in the first week of July, three others fell sick in like manner; but in these, buboes were discovered in the axilla and groins. The surgeon of the Lazaretto, who had hitherto ascribed the alarming mortality to ordinary fevers, now, for the first time, expressed his suspicion, and a consultation being held with two other surgeons, they, after visiting the sick, gave their opinion in the most express terms to the Council of Health, that the three patients had the plague. This was on the 8th, and all three died next day. The priest who had administered to the sick, and the surgeon of the Lazaretto, with part of his family, were infected also, and died.

" According to the historical account, the distemper discovered itself in the city about the 20th of June; but instances were rare before the first of July, when several accidents happened in the Rue de l'Escale. On the 9th, Messrs. Pissonel, physicians, gave information of a young man taken ill in another quarter of the city; the sister was taken ill the next day, and the brother died. She, with the rest of the family, were transported to the Lazaretto, where they all perished. It should be remarked, that the passengers in

the ships which arrived afterwards from the Levant, the end of May and in June, notwithstanding they brought foul patents, having performed only the usual quarantine of sixteen or nineteen days, were admitted into the city soon after the middle of June. Of these, one named Boyal, died with a bubo in the arm-pit. From the 12th of July to the 23d, there was a deceitful pause, during which the popular apprehensions began to subside. The physicians were reproached with ignorance in having mistaken ordinary fevers for the plague; and the precautions taken by the sheriffs were condemned as unnecessary. The disease however, in this interval, had continued to spread in the Rue de l'Escale, of which the Council of Health were informed about the 18th. A surgeon, who was sent to examine into this matter, declared the disorder to be a worm fever. About the 23d the Council were informed of the death of no less than fourteen persons in that quarter, and of several others falling sick. The surgeon adhered to his former opinion; but a physician, who accompanied him at this visit, declared the distemper to be the plague. From this time the plague spread in different places, and by the end of the month had got into the suburbs. Four physicians were appointed to attend the infected, and all declared the disease to be the true plague; but it having been hitherto confined chiefly to the lower class of people, the report of the physicians was not credited, their persons were insulted in the public streets, and the popular infatuation did not cease till some of the inhabitants of better rank were taken ill. After the first week of August the distemper increased rapidly, and universal dismay soon succeeded.

"Such was the rise of the plague at first, and its progress afterwards in the months of June and July; whence it appears that persons on board the suspected ship, those em-

ployed in airing the goods, a surgeon and a priest who attended the sick, were among the first infected. That the passengers from the several ships, all of which ships, the first excepted, brought foul patents, were, together with their baggage, admitted into the city, after performing a quarantine of little more than eighteen days. That the distemper from the 20th of June till towards the end of July, advanced very slowly, and sometimes seemed to pause. That it attacked chiefly the poorer sort of people, and was found in distinct quarters of the city, but more particularly for some time among families inhabiting the Rue de l'Escale, where it broke out the beginning of July. And lastly, that during the first forty days, few or none of the infected recovered ; a circumstance entirely consonant to what was observed in the beginning of the plague at Aleppo."

" The report transmitted to the Regent by M. Chicoyneau, the 18th of August, represents the physicians and surgeons as unanimous in their declaration, ' that when one person in a family was attacked and died, the rest soon underwent the same fate, insomuch that there were instances of families entirely destroyed in that manner ; and if any one of an infected family fled to another house, the contagion accompanied him, and proved fatal to the family where he had taken refuge.'

" The first hospital opened for the infected proved fatal to all the attendants. The introduction of the plague into the Hôtel Dieu was traced to a woman received as a patient from the Rue de l'Escale, the street where the distemper first broke out. Two of the nurses who assisted at her reception, and the matron who changed her linen, were taken ill next day, and died after a few hours' illness. From them the contagion spreading with dreadful rapidity, destroyed physicians, surgeons, apothecaries, confessors, and all the

other officers and servants of the house, with the whole of the poor in the hospital, including above three hundred foundlings. The priests and monks who attended the infected suffered in the same manner as the medical assistants, but many of them caught the infection by unguarded intercourse before the distemper was publicly avowed. Lastly, of two hundred and thirty galley-slaves, employed in going into the infected houses, and in burying the dead, two hundred and twenty perished in the space of ten or twelve days. It were superfluous to collect a greater number of particular instances, where the whole tenor of the history concurs to establish the fact in question."

The plague raged with great violence in August and September, destroying sometimes 500 in one day. It declined as suddenly in October, and continued to lessen until it had almost entirely disappeared in January and February of 1721. The number of inhabitants at the commencement of the plague, was reckoned at 90,000, and of those 40,000 are supposed to have died. As it declined in Marseilles, it spread into the surrounding country, which till then had been exempt.

Would the plague have broken out at Marseilles had Captain Chataud's fatal ship been wrecked on its way, and never reached the shores of France? We are disposed to believe that it would not, if all communication with the East had been prevented. For even when the plague was raging in Marseilles itself, those who kept themselves strictly excluded, were not attacked by it. We have seen that it destroyed about one-half of the inhabitants, and yet we have the positive assertion of the Bishop of Marseilles, that " during the desolation of Marseilles in 1720 and 1721, the plague did not penetrate into the religious communities who had no communication with persons outside." We are too good

Protestants to ascribe this exemption to any miraculous interference in behalf of the inmates on account of their superior sanctity; and therefore can find no other reason than that they had no communication with those affected with plague. We must remember that at that period the number of "religieuses" in France was immense. It was before her expurgation—to use the term employed in describing the clearing of a town from the plague.

The exemption of the convents from the plague forms a contrast between it and the cholera, as we observed that one of the first cases of cholera at Moscow was in a convent; as also the great tract of intermediate country which remained free of all infection. The plague follows the line of human intercourse, and when that line is in the sea, which cannot be infected by the troubles of man, it strikes root the moment it touches land. It colonizes—going from port to port. It does not sweep over vast districts, like an inundation of barbarous hordes.

Although the plague is undoubtedly a disease which requires human intercourse to spread it, yet that is not sufficient of itself. The fuel must be prepared, or the spark falls in vain. It spreads only at particular seasons, and in particular places. We have given an example of its arrival at a place where all was ready for its reception, and where its triumph was instantaneous. We shall now give one of its arrival at a place where it made slow progress at first, and had difficulty in effecting a footing. This is the intermediate link between such a place as Marseilles and the rest of France, which at that time was not infected at all. Our example shall be the island of Cyprus,* in 1759.

"In the month of April, 1759, a large Turkish vessel, laden at Alexandria, and bound for Constantinople, was wrecked

* See the Map attached to this volume.

in her passage, not far from Cape Baffa. Of the crew who were saved, a great part happened to be infected with the plague; which was first communicated to certain villages on the road to Limosal, and afterwards to that town itself.

" Some of the sailors died in the villages. The rest, after a short stay at Limosal, proceeded to Larnaka; where they remained only a few days till a vessel presented, in which they crossed over to Syria. None of them died in Larnaka; though it was known that several actually had the plague.

" The contagion spread with such rapidity at Limosal, that, in the month of June, upwards of four hundred persons were reckoned to have died of it. Many of the inhabitants fled to the neighbouring villages, and to the mountains, transporting the contagion along with them. But though the plague showed itself now and then in those parts where the fugitives had taken shelter, as well as in other inland villages which had intercourse with Limosal, yet it was only about Baffa, and near to Limosal, that it spread considerably.

" The condition of Larnaka, at this period, was remarkable. It had received part of the infected crew from Limosal; it had maintained a constant intercourse with the infected quarters of the island; peasants and mule-drivers from those parts, with the pestilential sores on their bodies, were daily in the streets and markets; and some of them died in the houses of Larnaka. On the 22d of May, a vessel arrived from Damietta, which put on shore some infected passengers and sailors, who lodged in the houses, and communicated freely with the natives. Another Turkish vessel, from the same place, arrived some time after, with infected persons on board, one of whom died on landing at the Marine. Notwithstanding this new importation, none of the inhabitants of Larnaka were known to have contracted the plague. The Europeans, from whom many of the above cir-

cumstances were, at the time, carefully kept secret, observed no precautions for their own safety ; while the natives consoled themselves with a traditionary notion, that a plague which did not begin in December, was not to be dreaded.

" During the hot months of July, August, and September, little was heard of the plague, and it was generally supposed to be extinguished at Limosal as well as in the villages ; but the truth was, it had all along continued lurking in those parts, showing itself only by starts, particularly at Baffa, Piscopi, and other villages on the western and southern sides of the island.

" In the month of October, the plague increased in those parts where it had appeared in the spring, and soon after, broke out at Nicosia, to which place the annual fair of St. Demetrio had drawn a great concourse of people from most parts of the island. The magistrates of Nicosia endeavoured at first to conceal the nature of the distemper, under the name of a malignant fever ; and in December, when eight or ten died daily, the dead bodies were buried privately in the night, in order to prevent the inhabitants being alarmed by frequent funerals. But, towards the end of the year, matters became too serious for stratagems of this kind ; for the contagion, which had, some time before, got among the Greeks and Armenians, was now arrived at such a height, as on some days to carry off fifteen Christians ; which people, in number, bear a small proportion to the Mohammedans.

" The Europeans at Larnaka, deceived for some time by false accounts from Nicosia, continued to walk about without apprehension ; and even when better informed, by letters from the Terra Santa convent, about the beginning of January, which clearly asserted the nature of the malady reigning in the capital, and which carried off between forty

and fifty persons daily, they still were inclined to doubt the intelligence, and to indulge ill-grounded hope: neglecting those precautions which, however salutary, must in some measure bring all commercial affairs to a stop.

"Towards the end of January, the plague advanced so dreadfully at Nicosia, that the Mohammedans enjoined public processions and supplications: an expedient which, by bringing together a promiscuous crowd of people, served only to propagate the contagion more effectually. The Europeans at Larnaka now caught the alarm; for the fugitives from Nicosia, exaggerating the scenes of calamity from which they had fled, spread terror wherever they came.

"In the beginning of February, the distemper appeared among the Turks at the Marine, and soon after, at Larnaka. The Europeans shut up. The daily burials soon increased to eight or ten; and during February, never exceeded twenty. In the month of March, the disease would appear to have been more malignant than at first, for few or none of the infected recovered. The daily funerals arose to twenty-five and thirty; and many of the inhabitants fled to the mountains.

"The distemper continued to rage at Larnaka all the month of April; and spread, at the same time, over the island—penetrating even into the province of Carpass, a circumstance not known to have ever happened before. At the Marine, the daily burials decreased, which was attributed to the flight of the wretched inhabitants; many of whom, like those of Larnaka, abandoned their half-desolate houses, and sought refuge in the country."

It committed such devastation over this country, that there were hardly hands enough left to gather in the harvest: giving a sad significance to the cypress-tree, which derives its name from the island.

Had there been a Parliamentary Commission sent to Cyprus in the year 1759 to ascertain whether the plague was an infectious disease, it might have reported in the negative ; and had it qualified its report by the adverbs *there* and *then*, it could have incurred no blame ; for, in some places at least, it hardly exhibited its contagious character. We may thus learn, no opinion upon the contagiousness of a disease is of any value beyond the time and place which afford the facts on which the opinion rests. Because the plague was not contagious at Cyprus, or but slightly so at one time, it did not thence follow it was not contagious at Aleppo or Marseilles. Contagiousness is not an essential attribute of any disease ; it is an accident dependent upon many modifying causes.

Let us now proceed to apply this lesson to the most important question, of the contagiousness of cholera. Before investigating the evidence in favour of the cholera being contagious, we shall briefly advert to the opposite view of the case. In the Second Report of the Metropolitan Sanitary Commission, p. 56, we meet with the following sentences :—

" 1*st*, That the disease, as it has recently appeared in Persia, in Trebizond, and in Russia, is unchanged in its general character, *i.e.*, from the former epidemic.

" 2*d*, That the more recent experience in Russia has led to the general abandonment of the theory of its propagation by contagion—a conclusion in which, after a full consideration of the evidence presented to us, we fully concur."

We are naturally anxious to know what evidence was presented to Her Majesty's Commissioners, on which they founded the gratifying conclusion that cholera is not contagious. The evidence is from the following sources :—*first*, The despatch of Doctors Sapi and Borg to the Vice-Consul at Constantinople upon the disease, as observed by them at

Trebizond; *second*, The report of the physicians appointed by the Swedish government to investigate the disease at Moscow; *third*, and *last*, The opinion of Indian practitioners. Admitting the evidence derived from these places to be unexceptionable, what is the only conclusion which it justifies? Neither more nor less than this, that the cholera was not contagious in Turkey, Russia, and India. And the Commissioners have no right whatever to make the abstract assertion, that the cholera is not propagated by contagion.

But it may be asked, How could these Commissioners get at any other evidence? They could not bring the cholera here, and experiment on the effect of another latitude and another climate. We reply, that had already been done for them. If the cholera was quite unchanged in all its features when it reappeared in Russia and Turkey, is there any reason to suppose it will be changed when it appears here? Unless the Commission had the clearest proof that there had been such a change in the climate and constitution of this country since 1832, as would necessarily modify the character of an epidemic like the cholera, and strip it of its contagious qualities, it was their bounden duty to investigate the evidence for and against the contagiousness of the disease in its former visitation. This were far more germane to the matter than telling us it was not contagious in India. It is not so long since the cholera was here as that all who had to do with it then are now dead and not to be had as witnesses, and even were it so, there is ample contemporary testimony on which a sound judgment may be founded.

We propose now leading evidence to prove, that both in the former and recent epidemic, the cholera was contagious in Scotland. The Commissioners are not to blame for being ignorant of the contagion of the recent epidemic, but we

think they are to blame for rashly concluding that it would not be contagious. And what we most dislike, is their speaking about the demoralizing effects of the doctrine of contagion. Careful investigation and accurate conclusions are the morals of science. With the consequences which may flow from the discovery of truth, scientific inquirers, as such, have nothing to do.

To return from this digression, we shall proceed at once to call our witnesses to prove that, in Scotland in 1832, the cholera was contagious; and in doing so, we shall quote largely from an article that appeared in No. cxxxv. of the Edinburgh Medical and Surgical Journal, by Professor Simpson of Edinburgh,* as we look upon it as a model of scientific investigation, worthy of the present renown of its author, which this and his other early labours show to be no less well earned than it is now far spread.

"The Leith and London Smack Trusty arrived at London on the 19th of February, and after remaining in port for fourteen days, sailed again on the 4th March, with ten of a crew, including the captain and mate, and six passengers on board. In London, the cholera was then prevailing to a considerable extent, more particularly on the side of the river, and in the quarter connected with the shipping.—1. On the morning of the 6th, the cook was attacked with cholera at sea, and died on the 7th.—2. Another seaman complained of headache when the vessel was brought up in Leith roads (a distance of about 400 miles from London) on the evening of the 8th. This man assisted on the same night another of the crew and a cabin boy to pull ashore the six passengers, in the boat belonging to the smack. When he reached the

* On the Evidence of the Occasional Contagious Propagation of Malignant Cholera, which is derived from cases of its direct importation into new localities by infected individuals.

harbour, however, he found himself so unwell as not to be able to return on board, and died of cholera next morning in the Leith Hospital at twelve o'clock. This was the second case of the disease observed in Leith, the first having occurred about a month previously in a man who had been visiting his infected relations at Musselburgh.—3. The other sailor who landed with him was also obliged to remain on shore, and had an attack of cholera that night, but recovered. —4. On the morning of the 9th, another of the crew of the smack was seized with vomiting and purging immediately after the preventive boat visited the smack in the roads;—and the vessel having been ordered ten miles up the river to the quarantine station at St. Margaret's Hope, he was, when the vessel arrived there about five o'clock of the same evening, transferred to the hospital-ship Nymphe. The Nymphe (one of the old men-of-war employed as quarantine vessels in the station) had been previously cleared out as an hospital-ship to receive a suspicious case of cholera which had occurred on board one of the vessels under quarantine on the 2d March, but this man had been discharged as well on the 5th. At the time that the sailor from the Trusty was placed in the Nymphe, on the evening of the 9th March, the Nymphe had only two mariners left on board, who had volunteered to act as nurses. On the 11th, two other mariners were joined to these; and on the 16th, a fifth was added. The sailor from the Trusty had a severe attack, but continued in life till the 16th.—5. In the afternoon of the 10th, a second sailor was transferred from the Trusty to the Nymphe, labouring under cholera. He recovered.—6, 7. On the 11th, two new men were attacked, and sent to the Nymphe, both of whom died. One of them was a Leith porter, who had come on board the vessel in Leith roads, having returned with the boats which landed the passengers.

He and the pilot (who had joined the smack near the mouth of the river in Dunbar Bay) having been found on board by the officers in the preventive boat, were obliged to proceed with the vessel to the quarantine station. This porter, Murray, was cut off by the disease after an illness of only twelve hours' duration.—8. On the 12th, another of the crew of the Trusty was attacked and transferred to the Nymphe, but recovered in the course of a few days.

"Thus out of the whole crew of the Trusty, ten in number, one died of cholera at sea; a second on shore at Leith; a third remained there, but recovered; a fourth, whose case proved afterwards fatal, sickened while the vessel lay in Leith roads. Three others were attacked in St. Margaret's Hope, and sent on board the Nymphe; and of these three, one recovered and two died. The porter who joined the vessel at Leith also took the disease there, and died. The three remaining members of the crew, and the pilot, who came on board in Dunbar Bay, had each an attack of diarrhœa.

"Of the *five mariners* who had acted as nurses to the crew of the Trusty on board the hospital-ship, one was attacked with cholera during the afternoon of the 15th, and died in less than twelve hours. On the 24th, another of them was attacked with nausea, vomiting, purging, and tenesmus, but recovered. On the morning of the 27th, a third is reported in the ship's journal as attacked with the premonitory symptoms of cholera; but is entered as better on the 28th and 29th. On the evening of the day on which the third nurse was attacked, a sailor was sent on board the Nymphe from a second infected vessel that had arrived in the quarantine ground, but up to that day only the men of the Trusty had, with the exception formerly noticed, been on board of her as patients."

Dr. Simpson himself minutely inquired into the details of this case, and guarantees the accuracy of the statement.

The following instance is reported by Dr. Brewster, brother of the celebrated Sir David Brewster, and clergyman of the parish in which Ferryden and Boden are situated :—

"The village of Ferryden is placed on the south bank of the South Esk, opposite to the town of Montrose, and contains about 700 inhabitants. The district of country in which it lies remained altogether free of cholera, when, in 1832, and the earlier months of 1833, the disease was prevailing in different parts of the kingdom. In the end of June 1833, the smack Eagle, from London, arrived at Montrose. Two cases of cholera had occurred amongst the crew during the passage from London, one soon after the smack left that port, and the other off Harwich. As soon as the vessel reached Montrose river, the crew dispersed to their several homes. One of them, Robert Findlay, an inhabitant of Ferryden, carried his clothes and bedding to his house there. A day or two afterwards, two children in the village, who were reported to have been seen tumbling during the preceding day on Findlay's mattress as it was laid out to the air, were seized with rapidly fatal cholera, and died on the 2d of July ; and this, it may be proper to remark, took place at a time when the disease was considered to have nearly or entirely disappeared from Scotland. On visiting Ferryden that day, Dr. Brewster found the mother of the two children labouring under a fatal attack of cholera. The malady subsequently spread through the village, but not rapidly ; and during the four weeks it continued, it carried off twenty-seven out of the 700 inhabitants, or nearly one out of every twenty-seven of the residents. It appeared (Dr. Brewster observes in the communication with which I have been favoured) in different parts of the village in succession, and almost uniformly among the relatives, visitors, and neighbours of those who were previously af-

fected. Out of the few cases, he adds, which appeared in Montrose, two were relatives of the sick in Ferryden, whom they had gone to visit there, and were themselves seized with the disease after their return home. The inhabitants of the adjoining district of country in general carefully avoided all communication with Ferryden, and the disease only appeared in one other part of the parish, viz., in Boddin, a small village on the sea coast, nearly three miles south from Ferryden. Only two cases occurred in this locality, but these two afforded strong corroborative testimony of the contagious property of cholera. Margaret Stott, a young woman, an inhabitant of Boddin, went to visit her sister at Ferryden, and, upon returning to Boddin, was seized with the disease, and died in two days. Jean Peterkin, an aged woman, who lived in the house adjoining to that of Stott, and who had not been out of the village, assisted, amongst other things, in putting Stott's body into the coffin, and afterwards washed her bedding. In the course of two or three days, she had a fatal attack of cholera. No other person (Dr. Brewster adds) in the village of Boddin, or in the parish, or in the surrounding district, with the exceptions now noticed, was affected by the disease."

The next case rests also on Dr. Simpson's own authority:—

" In the village of Bathgate, which contains a population of nearly 3000 inhabitants, and is situated in West Lothian, eighteen miles west from Edinburgh, on the great road between that city and Glasgow, six cases of pestilential cholera occurred during the prevalence of the disease in Scotland—four of them in persons who came to the town from infected districts, and the two others in the female villagers who acted as nurses to these strangers. There were two importations of the disease.

" *First,* A middle-aged female stranger was allowed,

secretly and contrary to the orders of the Local Board of Health, to enter one of the lodging-houses within the outskirts of the village, on the evening of the 20th April 1832. This woman had, as was afterwards ascertained, been for some time a resident in Glasgow, but she had gone two or three days previously to Edinburgh, (where the cholera was at that time prevailing,) in order to relieve some goods lying in a pawnbroker's shop. After having lodged in Edinburgh for either one or two nights, she set out again for Glasgow on the morning of that day on which she reached Bathgate. By the time she arrived at this latter place, she was *already* complaining of being unwell, having become indisposed upon the road; but her state was not such as to alarm the lodging-house keeper, or to prevent him admitting her. Having manifested, however, during the night, well marked symptoms of cholera, her condition was early on the following morning reported by Mr. Dixon, surgeon to the Local Board of Health, who immediately adopted all the means necessary to prevent the spread of the disease, and sent a female, who had been eighteen months resident in the village, to attend her as a nurse. The stranger died on the night of the 22d April, after an illness of about forty hours. Next day the village nurse, after being engaged in washing the clothes of the deceased, was seized with all the most marked symptoms of malignant cholera. She recovered, however, after passing through a very severe attack of the disease.

"No other cases of cholera were seen in the village till the evening of the 27th of April, when the second importation of the disease took place in the persons of three female mendicants, who had, the second or third day previously, left Edinburgh, having been lodging there in Blackfriar's Wynd, where the disease was then prevailing. On the 25th they were in the immediate vicinity of, and probably visited

Newbridge, a small village at mid-distance between Edinburgh and Bathgate, and in which cholera was perhaps more prevalent and fatal, proportionally to the number of inhabitants, than in any other locality in Scotland. That night (25th) they slept at the farm-house of Niddry Mains, and while there, either one or two of them complained of being unwell, so much so that they did not reach the village of Broxburn (which is only about a mile distant from the farm-house, and about two miles westward of Newbridge) till the afternoon or evening of the 26th. Mr. Andrew Millar, the son of the farmer at Niddry Mains, was obliged, as I am informed by Dr. Thomson of Broxburn, to come out of church on the following Sunday (the 29th) from sickness, followed by an attack of diarrhœa and some vomiting, which continued for about two days. His father, who had been for some time in an infirm state of health, became suddenly much indisposed on the evening of the 4th May, had rice-water evacuations to a great extent during the night, with much sickness and sense of sinking, and when seen by Dr. Thomson on the following morning, was evidently in the collapsed stage of cholera, and died that afternoon. These two cases of the Messrs. Millar were, as Dr. Thomson assures me, the only instances of the disease among the resident inhabitants of the extensive district in which he practises, with the exception of either one or two examples of persons who had been exposed to the disease in Edinburgh, and who had afterwards sickened at Broxburn.

"But to return to the three mendicants. They took up their abode during the night of the 26th in a lodging-house at Broxburn, and endeavoured, as was afterwards confessed, to conceal the disease under which they were labouring. Next morning two of them presented such open and alarming symptoms of cholera, that all of them, however inhu-

manely, were forced out by the lodging-house keeper, and after lying on the public road for several hours, they were, by the local authorities of the place, forwarded in an open cart to Bathgate, a distance of seven miles. By the time they reached Bathgate they were both in the stage of collapse, and were immediately placed in a room in the village jail, a somewhat isolated building, situated in almost the very centre of the town. The elder stranger sunk in thirty hours after her arrival, and the younger one, her foster-child, survived only for about twenty-four hours longer. Three female nurses, all natives, and resident in Bathgate, were engaged to attend these cases—a duty in which they were assisted by a niece of the elder stranger, who had accompanied her. One of these three town nurses was attacked with cholera on the morning of the 30th, the day on which the younger stranger died; and she sunk under the disease in the course of about eighteen hours. On the same day also, the third remaining stranger, a girl of twenty, became affected with the disease, and died of the secondary head affection on the fourth day afterwards. Besides the four nurses that I have mentioned, there were also necessarily freely exposed to the contagion in Bathgate the landlord and his wife to whom the lodging-house belonged in which the first patient died, and where her nurse was confined, as well as the four surgeons of the village, (one of whom lived with the patients as a nurse,) the clergyman of the parish, who was most assiduous in his attentions to the sick, and a man who frequently visited them and acted as porter to the hospital. None, however, of these or of the other inhabitants became affected with the disease, with the exception of the two nurses, and perhaps we may add, one of the surgeons, (Mr. Dickson,) who had an attack of tormina and diarrhœa. The villagers in general, under a salutary

dread of the disease, avoided as carefully as possible all intercourse whatever with the infected persons and houses.

"All the district and villages more immediately around Bathgate totally escaped any attack of cholera. The nearest point at which the disease is known to have occurred was at Linlithgow, which lies about seven miles to the north, where one or two suspicious but not decided cases were observed. Towards the east, Mr. Millar's of Niddry Mains, about eight miles distant; and to the south, some cases to be afterwards mentioned, which occurred at Carnwath, ten or eleven miles distant, were, I believe, the nearest seen in these directions; and on the west side the disease does not seem to have shown itself nearer than Clarkstone, a village thirteen miles distant, and in which it prevailed to a considerable extent. In this calculation, I do not of course include some instances in which the affection was observed in the passengers in the canal boats, and others who were passing through the district, or who came to it, after being already exposed in infected localities, and died without propagating the disease. One or two such cases were seen by the medical men both of Linlithgow and Broxburn."

Here, as in the case of the plague at Larnaka in Cyprus, the fuel was not then ready, and the disease appeared like a spark from a flint without tinder for it to fall on, a moment incandescent, and straightway cold again. It may burn the hand of an individual, but cannot fire a village.

We shall conclude our extracts by the following, which enables us to bring forward the valuable authority of Professor Alison, who is celebrated alike for his wisdom and his goodness:—

"Before cholera reached Edinburgh, it raged for some time previously in a severe degree in the district of country lying to the east of the city, as in Haddington, Tranent,

Prestonpans, &c., and particularly in the town of Musselburgh, six miles distant. The first cases of the disease which were observed in Edinburgh, occurred towards the latter end of January 1832, and were all in the persons of individuals who had been visiting some of the places to the eastward where the cholera was prevailing, and who had consequently been directly exposed to the morbific cause or causes of the malady (whatever we allow these to be) which were operating in these infected localities. The second case (27th January) afforded an instructive example of the great difficulty which is often experienced in endeavouring to arrive at the truth in such investigations as the present. The subject of the case, an Irishwoman, residing in a close off the West Bow, was taken to one of the cholera hospitals, and was for some time conceived to afford the strongest possible evidence against the doctrine of contagion, for she stoutly denied having been out of Edinburgh. During the period of her convalescence, however, she voluntarily mentioned to Dr. Ransford, then clerk to the hospital, that she had been some days previously singing in the streets of Haddington, Tranent, and Musselburgh, and had slept at Prestonpans in the bed of a cholera patient; and she stated that she had been before deterred from making this confession, under the dread that she would be punished for bringing the disease into the town.

"None of the three first cases of importation of cholera into the city proved effectual in propagating it to any of the resident inhabitants; and no instance of a person being attacked with the malady, who had not been in the infected eastern districts, occurred till Saturday, the 28th of January, when a woman, Widow Macmillan, died of it in Skinner's Close, High Street, after nursing her grandson, who was previously ill of the disease, and had been exposed to its

contagion by residing in a house in Musselburgh, in which several fatal cases took place. Professor Alison has been so kind as draw up for me the history of these two cases, in as far as they bear upon the question of imported contagion; and I shall here give the communication with which he has favoured me in his own words, and with his own excellent prefatory remarks and comments.

" ' It seems to me clear,' he observes, ' that the evidence of the contagious nature of any disease turns ultimately on a calculation of chances. The question always comes to this,—Is the circumstance of intercourse with the sick followed by the appearance of the disease, in a proportion of cases so much greater than any other circumstance common to any portion of the inhabitants of the place under observation, as to make it inconceivable that the succession of cases occurring in persons having that intercourse should have been the result of chance. If so, the inference is unavoidable, that that intercourse must have acted as a cause of the disease. All observations which do not bear strictly on that point are irrelevant, and in the case of an epidemic *first* appearing in a town or district, a succession of two cases is sometimes sufficient to furnish evidence, which, on the principle I have stated, is nearly irresistible.

" ' For example, in the case of Widow Macmillan, in Skinner's Close, it is certain, as the whole town was under medical surveillance at the time, and every one on the watch for cases of even suspicious cholera, that she was the *first* person in Edinburgh or Leith (*i. e.*, in about 160,000 people) who took the disease without having been in the district at Musselburgh, Tranent, &c., where it prevailed; nor was there any case in Edinburgh or Leith in a person who had not left the town for ten days after. And in regard to this first case of the disease in Mrs. Macmillan originating

in Edinburgh, the following points were ascertained by a judicial inquiry or precognition made, at the request of the Board of Health, by the Sheriff of the county, who examined different witnesses on each point till he was perfectly satisfied of its truth. 1*st*, That the woman herself had never been out of the close in which she lived during the existence of the disease in the neighbourhood. 2*d*, That her son, a hawker, had slept in a house in Musselburgh, in which a woman was dying of the cholera, on the Monday. 3*d*, That after returning to town, he was seized on Wednesday with vomiting and purging of whitish or watery matter, cramps, and feeble pulse. I saw this lad myself on that day, and immediately suspected that he had been at Musselburgh, which was at the time denied, but afterwards admitted, and confirmed by abundant other evidence. 4*th*, That Mrs. Macmillan was with him during the day, in a small confined room, rubbing his limbs and nursing him, and he recovered under the use of opiates and stimulants. 5*th*, That on the Saturday, when he was convalescent, she was seized with the disease in its most virulent and unequivocal form, and died in ten hours. Now, I presume, it will not be denied that the epidemic cholera, which was never known in Edinburgh before 1832, and has not been seen in it since 1833, must have some cause or causes of local and temporary existence only. That the lad Macmillan, who had slept a night at Musselburgh, (then much affected with the disease,) should be seized with it, proves nothing as to the question, whether intercourse with the sick has the power of exciting the disease or not. But if that intercourse has no such power, it is plain that his mother, who never left her own close, had no more business to take the disease than any other of the inhabitants of Edinburgh or Leith, and her infection must have been a mere chance. The chances, there-

fore, are nearly 160,000 to 1 against her being the first person in Edinburgh or Leith who should take the disease, and almost infinite to one against her being infected by it within sixty hours after her son.

"'From the time, therefore,' Dr. Alison adds, 'when I was satisfied as to these facts, I have never doubted of the disease having a contagious property, although I have never thought it proved that its extension is to be ascribed to that property alone.'"

Such is a small portion of the evidence accumulated during the previous visitation of cholera, illustrating the contagious nature of the disease. We shall now mention some facts of a similar kind in respect to the present epidemic.

Out of 183 cases treated by the physicians of the Edinburgh Homœopathic Dispensary, and scattered over the whole of Edinburgh, seventy-three were ascertained to have been exposed to contagion. That is more than a third of the whole number.

"Since the 28th of October," writes Dr. William Robertson, in an excellent article upon the statistics of the Cholera Hospital in Edinburgh, over which he presided, "eighteen nurses have been employed at different times in the Cholera Hospital; five of these have had severe attacks of cholera, and three have died. A sixth, who for twelve hours had frequent vomiting and purging, was treated as a cholera patient, and recovered; yet, at the same time, a very large number of nurses were employed in the neighbouring buildings of the Royal Infirmary, and escaped the disease. The circumstances, habits, and diet of both sets of nurses are the same. The work is not more severe in the Cholera Hospital than in the Infirmary. The arrangement for ventilation and cleanliness are not defective in Surgeon Square, (*i.e.*, in Cholera Hospital); but for nearly two months past, no

cholera patients have been admitted into the Royal Infirmary. In illustrating the contagiousness of typhus fever we are accustomed to regard evidence of this kind as tolerably conclusive."

There are numerous caves in the neighbourhood of Naples, into one of them, called the Grotto del Cane, if a dog be put it dies. It does not die if put into any of the others ; hence it is supposed that there is something peculiar in that grotto which kills the dog. There are two buildings in Surgeon Square, into both of which a number of women are put of the same class and character. The whole that enter one of the buildings come out as they went in. Nearly a third are smitten with a peculiar and fatal disease in the other building. Hence it is supposed that there is something in the latter building which destroys these poor women.

We shall now descend from generalities to particular instances, and our first document is a letter from Mr. Moir of Musselburgh, (a gentleman well-known in the republic of letters, under the Nom de Guerre of *Δ*, and whose accuracy and veracity are beyond dispute,) to Mr. William Scot :—

"INTRODUCTION AND SPREAD OF THE CHOLERA AT PRESTONPANS, KIRKLISTON, AND CARRINGTON.

"MUSSELBURGH, 2*d March*, 1849.

"MY DEAR SIR,—I promised to send you some corroborative proofs of cholera being a contagious disease in Scotland, from a sketch of its introduction recently into some of the localities in this neighbourhood ; and I have selected Prestonpans for the purpose, from being fortunately enabled to obtain undoubted information regarding the first appearance of the disease there, and of the communication and consanguinity subsisting between the original victims.

"Without offering a word of comment, I subjoin a list of

the first twenty-three cases, as successively registered in the books of the inspector of poor for the parish, and which have been extracted for me by my friend, Dr. Thomas R. Scott. For the local information I am indebted to Mr. William Alexander, salt-manufacturer, a gentleman resident on the spot, and who took a prominent part in the enforcement of local sanitary measures.

"Case I.—Grace Blyth, seized on the 24th November, died on the 25th. Returned from Gilmerton on the 23d, whither she had gone to visit a relation labouring under cholera there.

"Case II.—Jane Gibb, seized on 6th December, died on 8th. Washed the clothes of Grace Blyth on the day previous to her own attack.

"Case III.—George Mitchell, seized on 7th December, died same day. Lived in the house adjoining the two first cases, and had visited both.

"Case IV.—Fanny Gibb, seized on the 8th December, died same day. Sister of Jane Gibb, and laid out her body after death.

"Case V.—Widow Bartleman's child, seized on the 8th December, recovered. House adjoining the two others.

"Case VI.—Mary Anne Gibb, seized on 10th December, and recovered. Niece of Jane and Fanny Gibb. She was in service at Musselburgh, and was sent for to nurse her relatives.

"Case VII.—Jane Troup, seized on 10th December, and recovered. The first six cases occurred at the western extremity of the village. Jane Troup, who went about collecting rags, got possession of some of the clothes of Fanny Gibb; took them to her house in the centre of the village, (the Big Wynd,) and was attacked on the succeeding day.

" Case VIII.—Alexander Troup, seized on the 11th December, and died on the 16th. Husband of Jane Troup.

" Case IX.—Widow Bartleman, seized on 14th December, died on 16th. Mother of (Case V.)

" Case X.—Mrs. Fraser, seized on 14th December, and died on 15th. Attended Troup and his wife during their illness. Lived in adjoining house.

" Case XI.

" Case XII.

" Case XIII.—*Two* children of Mrs. Fraser were seized on the 14th December, shortly after their mother; a *third* on the 15th; and all three died on 16th.

" Case XIV.—Elizabeth Notman, seized on the 15th December, died on 16th. Attended Jane Gibb and several others. Washed Gibb's clothes.

" Case XV.—James Mackenzie, seized on 15th December, and died on 16th. Lived in the upper flat of Troup's house, and visited the family repeatedly during their illness.

" Case XVI.—Margaret Notman, seized on 16th, and died on 17th December. Daughter of Elizabeth Notman, (Case XIV.)

" Case XVII.—James Cameron was seized on 17th December, and died same day. Lived in house adjoining previous cases. (XIV. XVI.)

" Case XVIII.—Widow Crawfurd, seized on 17th December, died on same day. House adjoining Troup's and Fraser's, both of which families she visited.

" Case XIX.—Jean Deans was seized on 17th December, died same day. Aunt of Mrs. Fraser.

" Case XX.—Margaret Gordon, seized on 17th December, and recovered. Sister-in-law of Jean Deans, and washed her clothes.

"CASE XXI.—Jean Hunter, seized on 17th December, and recovered. Lived in house adjoining that of Blyth, the Gibbs, and Mitchell, at west end of the village, all of whom she visited during their illness.

"CASE XXII.—Janet Deans, seized on 17th December, recovered. Sister of Jean Deans.

"CASE XXIII.—Margaret Notman, seized on 19th December, and recovered. Sister-in-law of Elizabeth Notman, (Case XIV.,) and mother-in-law of Mrs. Fraser, (Case X.)

"The total number of cases which occurred at Prestonpans was fifty-two, and the deaths twenty-seven. As I challenge investigation of this statement, you, my dear Sir, may make any use of it you please.

"Ever most truly yours,

"*William Scot, Esq.* "D. M. MOIR."

"P.S.—Since writing the above I have received the following strongly confirmatory statements relating to neighbouring localities—Kirkliston and Carrington; and I select them from among many others, which have been recently kindly forwarded to me, as comprehending the two great points at issue, in reference to the contagiousness or non-contagiousness of cholera—the importation of the disease from an infected district, and its spread from that importation in a previously healthy one. The first series of cases has been furnished to me by my quondam pupil, Dr. Andrew Legat of Ratho; the other series by Mr. Thomas Thomson, surgeon, Gorebridge, who also writes from personal observation.

"Up to Wednesday, 14th February, the parish of Kirkliston had kept perfectly free from cholera, when, at eleven o'clock on the evening of that day, an Irish labourer, John MacGochie, accompanied by his wife, arrived at the railway

station there. Both went to bed apparently well; but, in a few hours, decided symptoms of the disease exhibited themselves in the woman. They had come from Ambleside, *via* Kelso, an infected town, where they had slept on the night preceding. She died on the forenoon of Friday the 16th.

"Case II.—Occurred in Ronald Gillies, a Highland labourer, who lodged in the second hut from MacGochie's—the door of which he had to pass in getting to his own, and many times did so between the Thursday and Saturday when he took ill. Was at work on last-mentioned day, 16th, but had to come home. Died on Sunday, 17th, at nine, A.M.

"Case III.—John MacGochie, the husband of Mary, (Case I.,) sat up with the body of his wife during the night of Friday 16th, and buried her on the following day, up to which time he felt well. Immediately after the funeral he went forward to Edinburgh, where he became ill, and was removed to the Cholera Hospital. He recovered.

"Case IV.—The next person attacked was Miss Braid, the sister of Mr. Braid, surgeon. On Sunday morning her brother—who was by this time himself labouring under the premonitory symptoms—went directly home from the bedside of Gillies, (Case II.,) on whom he was in attendance, to his own house, which is at the opposite extremity of the village, and remained beside her for a considerable time before again venturing out. She was seized in the course of the day, and died during the night following.

"Case V.—Poor Mr. Braid himself was the next who followed. As already mentioned, he had been complaining for two days previously; but it was not till Monday, 19th, at midnight, that cholera decidedly showed itself. At eight on the preceding evening he had assisted in placing the body of his sister in her coffin; and, at that time, said, 'he

felt he was in for cholera,' owing to some peculiar sensations. Death followed at eleven, A.M., on Tuesday the 20th.

"CASE VI.—Occurred on Wednesday night, in a part of the village still more remote from the original sphere of infection. It was in the person of Mrs. Grindlay, the woman who acted as nurse to Mr. Braid. She also died.

"CASE VII.—Brings us back to the original locality. Mary Kerr, a woman inhabiting the house next MacGochie's, (Cases I. and III.,) was attacked early on the morning of Thursday the 22d. While in attendance on case first, Mr. Braid had come into her hut to rest, and he remained there for some time; and she said *she felt aware of a peculiar heavy smell* about his person, which nauseated her. On that day she took bowel complaint, which, however, continued moderate until Thursday, 22d, when the disease assumed its more decided and virulent form. She recovered.

"CASE VIII. (and last.)—Was John Gillies, a brother of Case No. II., and who lived in the same house. After labouring under the premonitory symptoms for some days, the disease assumed its more decided form; but he also recovered.

"As a preamble to the Carrington cases, communicated by Mr. Thomson, it seems necessary to state, that, while the pestilence was at its height in Glasgow, Mr. J——n, a mercantile gentleman there, fell a victim to it. This happened to be a son of a respectable farmer in the parish of Libberton, adjacent to Edinburgh, who sent a brother of the deceased to bring home his remains for interment. This unfortunate proceeding was followed by the seizure of two brothers and a sister, one of the former of whom died—the one who had brought the remains from Glasgow;—and a servant girl having exhibited the premonitory symptoms,

she was conveyed home to Carrington, a locality some eight or ten miles southward, hitherto unaffected.

"Case I.—Janet Inglis, servant at Straiton, in the parish of Libberton, came home on the 8th January, labouring under symptoms of cholera. She recovered.

"Case II.—Mrs. Inglis, her stepmother, was taken ill on 13th, and died on 14th. Nursed her stepdaughter during her illness.

"Case III.—Mrs. Lyell, aunt of Janet Inglis, was in attendance on both the preceding cases. She was seized on the 16th, and died on 19th. Her house was next door to that of Mrs. Inglis.

"Case IV. (and last.)—James Inglis, father of Janet Inglis, (Case I.,) husband of Mrs. Inglis, (Case II.,) and brother of Mrs. Lyell, (Case III.,) was seized on the 16th, and recovered.

"To the three sorites here succinctly given, I could add many more in my possession, connected with the recent reintroduction of cholera to Scotland from Hamburg. When, by the doctrine of chances, these are satisfactorily accounted for, the others shall be at the service of the public."

We conclude with the following quotation from Dr. Müller's Report:—

"On the 27th of May, the ship Ixion of Nicolajew, coming from an infected place, brought to Sevastopel several persons who had been attacked, among others an army surgeon Sp., who was removed to his own house. On the 29th, his servant was taken ill; on the 30th, his two daughters; on the 31st, a female relation who nursed him; and on the same day, her two children; upon this the disease spread more widely through the town.

"Wollhynian department. The priest M. was attacked in the beginning of June, soon after his return from Kiew,

where the cholera prevailed, and died. A few days after, the woman who arranged the body was seized, and then her two children ; and so the disorder spread in Schitomir.

" In Luga, an employé, who came from Petersburgh, was the first person attacked.

" In St. Petersburgh, the first patient was a dean (on 4th June) who came from Novoi Ladoga, an infected place. The other early cases occurred on the great Neva ; they were boatmen in a wood boat from the infected district of Novgorod ; they were followed by two labourers belonging to another boat, next the ferrymen of the neighbourhood, and the labourers at the exchange. On the 7th June, occurred the first case among the inhabitants, in close proximity to the boats on the left bank of the Neva.

" At Jamburg, the first patients were eight labourers who had come from St. Petersburgh.

" At Rewal, also the first were two passengers who came from St. Petersburgh by the steamer of 24th June. Both of them died in the hospital, and thence the epidemic spread.

" At Riga, the widow P. was attacked on the 19th June, having come from St. Petersburgh by the steamer, and also a cook of Count Siewer's from the same place. Not till three days after did there occur other cases there, two of persons from the same neighbourhood."

We had intended giving some such examples from our own experience as we have just quoted, but we believe it is quite unnecessary, until at least the evidence afforded by these be got rid of in some way or other ; but we may state it as the opinion of almost all with whom we have conversed on the subject, and who have had opportunities of forming a correct judgment, that intercourse with those ill of cholera increases the liability to the disease ; and therefore that in Scotland the cholera is certainly contagious.

Those who are the most unwilling to admit the contagiousness of cholera, allow its tendency to "localize" itself, as they term it. That is, if cholera once gains access to a house, then all the inmates of that house, and all who enter it, become liable to be attacked by the disease. The fact is undoubted, and we have seen many instances of it; sometimes after the lapse of two weeks the poison continued to act upon a new comer. This naturally suggests the question, Where does the poison dwell? The rooms are sometimes perfectly bare; not even are there bed-clothes to harbour the deadly and subtle power. The cholera does not seem to be readily conveyed by *fomes;* for it was observed that at the hemp and flax wharfs of Petersburgh, where wares were stored from many infected districts, the cholera did not appear any sooner than in other parts of the city.* Does it dwell in the atmosphere? That, we should think, must be frequently entirely renewed; for with a window, a door, and a fire, there must be a rapid and total change of air. We cannot say where this morbific force resides. We might say it haunted a house, and there is no reason in the nature of things why it might not continue to haunt it for years as well as weeks. This is conceivable, and if it actually were to occur, it might give a hint to the ingenious speculators about ghosts, who have recently sought to revive many forgotten stories, and to advance into a place in history and science what hitherto belonged to the region of fable alone. Admitting as proved, which we are far from believing, that in certain places certain individuals see apparitions, we might imagine the phenomenon to be thus accounted for. That the human body in certain conditions can emit an influence capable of affecting others, and yet only to be detected by a

* Document transmitted by Central Board of Health to the Privy Council, 1832.

vital test, all must allow: and that this influence can dwell for weeks in a place, is also undoubtedly true. Suppose that a person is murdered, it is possible that in the terror and agony of his hour of horror he may generate a peculiar emanation from his person, which may linger in the place where the deed of death took place; and it is equally possible that certain delicately organized individuals, alive to all the finest influences which affect the nervous systems of persons so constituted, on entering the chamber where this emanation is, may become morbidly affected, and the specific form of morbid action may be a spectral illusion. If all this be admitted, then we shall have a good clue to many ghost-stories; and if it be not admitted, then we must be content to wait till the sun rises upon "the night side of nature." In the meantime, we would advise any of our readers who are interested in idle speculations of this kind to read a very ingenious and able article upon ghosts and ghost-seers which appeared in Number XVIII. of the North British Review.

CHAPTER III.

ITS PATHOLOGY.

In this Chapter we propose to discuss the predisposing, exciting, and proximate causes, and morbid anatomy of cholera; reserving for the sequel the consideration of the symptoms or semeiology, as well as all that refers to the treatment or therapeutics of the disease.

By "predisposing causes" we mean all those conditions of the body, whether natural or acquired, which render it peculiarly liable to the influence of the exciting causes of the disease—as, for example, sex and starvation. By "exciting," all the causes external to the body which tend to give rise to this peculiar morbid action within it, as the state of the atmosphere, or intercourse with the infected; and lastly, by "proximate cause," the morbid action itself, which, if unchecked, necessarily goes on to produce all the phenomena of the disease.

The proximate cause is the first in a series of morbid actions. Without it there can be no cholera; but the subsequent changes in the system may or may not go on. These secondary morbid actions, which are produced by the first proximate cause, become themselves in their turn the proximate cause of a second series of phenomena. As it is of great consequence that we should have distinct ideas on this subject, we shall quote a paragraph from Fletcher's Pathology to the point:—

"With respect to the admission of a proximate cause, there is much less approach to unanimity; and indeed the existence of such a cause is in the present day very generally, but, as it appears to us, very injudiciously questioned. In nine cases out of ten, a medical man, called on to define a proximate cause of a disease, will reply that he knows of no distinction between this cause and the disease itself, and that, in his view of the matter, the terms are synonymous. But this is to confound all distinction between what is often hidden and what is always manifest, and implies a very inadequate conception of what constitutes, strictly speaking, a disease. A disease is analogous to a healthy function; a proximate cause to the mechanism of that function. We may recognise the one without knowing anything about the other. If the discharge from the nostrils in catarrh, and the yellow colour of the skin and eyes in jaundice, be distinct respectively from an inflammation of the Schneiderian membrane, and an obstruction of the biliary ducts whence these symptoms proceed; if what a person, ignorant even of the existence of such a membrane, or such ducts, immediately perceives and recognises, be distinct from what a medical man arrives at only by study and observation; if, in a word, semeiology and pathology be distinct sciences, a disease is not identical with a proximate cause, but something resulting from it, and separated from it by a very distinct line of demarcation. It bears nearly the same relation to a proximate cause which a shadow does to the substance which produces it; and as the shadow is the immediate and evident effect of the interposition of this substance, so as to intercept the rays of light, whether the substance be obvious or not, so a disease is the immediate effect of its proximate cause, which, in like manner, may or may not be obvious; in other words, it is merely an abstract term, by which we signify

certain phenomena, without any reference to their immediate origin."*

The terms "predisposing," "exciting," and "proximate," although technical in their character, and generally confined in their use to pathological language, express the conditions under which all complicated phenomena take place. For example, suppose a hay-stack burned down, and we were to investigate the various steps of the operation; suppose we ascertained that some miscreant had soaked one part with turpentine, and thus had rendered it more liable to catch fire—this would be the predisposing cause of its combustion. Then suppose the fellow had lighted a large fire of shavings to the windward of the stack, and that the wind, laden with burning embers, had blown upon that part which had been prepared by the turpentine to catch fire readily, we should call that the exciting cause. Let us observe that we have purposely chosen a mixed cause to illustrate the meaning of exciting cause. The wind without the embers might have blown till it blew the haystack away altogether, but would never have set it on fire; and the fire without the wind would have been as innocent as if it were in the bosom of Hecla. The wind and flame together combined to make the exciting cause. The exciting causes of disease are almost all of this character; and we often cannot analyze the component parts, which, by their mixture, make an exciting cause. The meeting of the exciting cause, the fiery wind, with the predisposing cause, the inflammable hay, give rise to the combustion. But where is the place for the proximate cause? Flames and combustion are not the same. The northern lights stream in flames along the sky where there is nothing to burn, and the flames of the will-of-the-wisp may be seen to play above the swamp, without at all

* Elements of General Pathology, pp. 3, 4.

tending to dry it up, much less to set it on fire. The combustion of our haystack means that there has been a rapid union of the oxygen of the air with the carbon and hydrogen of the turpentine and hay. This chemical action, not cognizable by the senses, gives rise to the phenomenon of a brilliant light, attended with intense heat, which can be both seen and felt, and which, were we to carry out our illustration, would represent the disease as contradistinguished from its proximate cause.

To return from this digression to the consideration of the predisposing causes of cholera, the first that meets our eye is sex. According to the subjoined table, which corresponds in its results to the observations made at the Cholera Hospital in Edinburgh, the number of females attacked by the disease was nearly double the number of males. However, let us observe that this table also shows that the great majority of both the sexes were grown up, and the difference in the liability of the men and women to the disease may depend upon a difference in the habits, rather than be attributable to the sex alone. We are inclined to this opinion, for we find the relation of the sexes in reference to cholera to be reversed in other parts of the world, and it is hardly likely that climate could effect such a change if it were dependent upon sex alone. For woman's character, although still "*varium et mutabile semper*," seems to be essentially the most unchangeable thing in nature.

In India it appears that a larger proportion of women than of men were attacked by this disease. The proportion of males to females in the suburbs of Calcutta was, according to Mr. Jameson, as four to one; in some other places as two to one; and this observation is confirmed by Dr. Marshall in Ceylon, and Dr. Scott at Madras.* At Moscow,

* Orton, op. cit., p 454.

according to a table given by Markus,* the number of men treated in the extraordinary hospitals and houses for the reception of patients generally, was 1724, and the number of women 909. This was exclusive of the military force, who had hospitals of their own.

The reason of the greater proportion of women to men who have taken cholera here, we naturally find in their having much more to do both with the dying and the dead. With a devotion characteristic of their sex, they are always found hanging over their sick friends, relatives, or neighbours, and it is women who arrange the bodies for interment. The difference in the number of the sexes attacked by the disease here thus becomes an argument in favour of its contagiousness.

In regard to age as a predisposing cause, it has been observed, that infants at the breast do not seem liable to the disease, which coincides with our own observations. In the following table will be found the results afforded by the cases treated at the Homœopathic Dispensary :—

TABLE SHOWING THE RELATION OF AGE AND SEX TO THE NUMBERS ATTACKED AND TO THE MORTALITY.

Age.	Number of Patients.			Deaths.			Recoveries.			Per Centage of Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females	Total.
Below 10 years	9	12	21	3	4	7	6	8	14	$33\frac{1}{3}$	$33\frac{1}{3}$	$33\frac{1}{3}$
From 10 to 20	8	16	24	1	4	5	7	12	19	$12\frac{1}{2}$	25	$20\frac{5}{6}$
From 20 to 50	54	105	159	15	21	36	39	84	123	$27\frac{7}{9}$	20	$22\frac{3}{4}\frac{4}{3}$
Above 50 years	13	19	32	5	4	9	8	15	23	$38\frac{6}{1\,3}$	$21\frac{1}{1\,9}$	$28\frac{1}{8}$
Totals	84	152	236	24	33	57	60	119	179	$28\frac{4}{7}$	$21\frac{2\,7}{3\,8}$	$24\frac{9}{5\,9}$

The next predisposing causes we encounter are intemperance and destitution. With regard to the former, it has

* Op. Cit. Appendix.

been too much the practice in dealing with this as with other points connected with the cholera, to sacrifice rigorous truth to didactic effort. Were we to believe some well-meaning, but one-ideaed persons, we should conclude that total abstinence from stimulants would be nothing short of the harbinger of the millennium—that the cholera, as well as most other diseases, was sent as a special scourge to drunkards, and that no quiet living, respectable member of a temperance society need be at all alarmed when the cry of cholera is raised. At the first glance this statement seems to be borne out by statistics, and the tables we subjoin go to its corroboration. But a more general consideration, and a more extensive survey of the whole subject, will greatly modify this conclusion. Let it be observed that intemperance implies many things—destitution, filth, a wretched dwelling, reckless exposure to disease, and improper food. We have seen a drunkard staggering over his dying wife, vainly attempting to raise her in the bed. That to these concomitants of drunkenness rather than to the state of the body directly produced by this hideous vice, are to be attributed the number of the intemperate who perish from cholera, seems proved by the simple fact, that in India the proportion attacked is in direct ratio to the poverty of the persons. It is a disease emphatically of the poor. This is well brought out in the following passage from Dr. Orton's able and interesting work :—

"The clearest and most striking general observation which occurs regarding the prevalence of the disease in different classes of people, is, that the higher ranks of society have been found in India to suffer less than the lower; and this seems to hold good through all its branches, military as well as civil, native and European. If we could divide the population of India on this principle into two classes, in the

same manner as we have bisected the year, it is probable that we should find the less fortunate half affected in the same proportion to the rest, as are the six summer months compared with those in which the sun is on the other side of the line. Thus we constantly find that the officer suffers less than the soldier or the sepoy; that the superior description of troops, as the cavalry, &c., (who form the élite of the army,) suffer less than the infantry, and they again, greatly less than the hard-labouring and ill-fed camp follower. So also it is as constantly found that the brahmin (the supreme or priest-caste) and the sleek banian (merchant) suffer less than the ryot, who pays often as much as half the produce of his rice-fields to government for rent, and extorts from them a scanty subsistence under a burning sun; and still more remarkably less than the poor outcast pariah, who carries a burthen ten miles, and returns the next day empty-handed, for fivepence sterling.

"The greater prevalence of the disease among soldiers, both native and European, than their officers, has been from the first generally remarked. Thus during the first attack at Bellary, not an officer out of at least fifty at the station was attacked. In the severe attack of the 34th, not more than two slight cases occurred in a body of about thirty officers, whilst of the men, one in eight was admitted into hospital, and many died. In the first and very severe prevalence of the disease in the field-force in the Dooab, (General Pritzler's,) not more than two or three attacks occurred among the officers of the whole camp. In the Candeish field-force not one, though one of the corps suffered severely.

"In the centre division of the Bengal army, too, Mr. Jameson states:—'During the week in which the epidemic raged with so much fury, when the camp was a sick-ward, and every tent was filled or surrounded with the dead or

dying, the officers suffered comparatively very little. From a number that could hardly have fallen short of three hundred, only five or six deaths occurred; and it should be remembered, that at this time officers of all descriptions were equally exposed with the medical men, for the sick had become so numerous, that even the services of all were insufficient to tend them with proper care, and duly administer the requisite remedies.' Mr. Marshall states, that in his experience (in Ceylon) the commissioned officers were entirely exempted.

" In this circumstance, however, there is nothing peculiar to cholera. Commissioned officers are generally much more healthy than at least European soldiers. This is particularly remarkable with regard to the dysentery, or the particular inflammation of the large intestines, which destroys probably at least one-half of the Europeans who die in India in ordinary times, and in those parts where malaria does not exist in any notable degree, a still larger proportion. From this disease officers are almost exempt, even when it is prevailing as a most virulent epidemic, as it often does in standing camps in hot weather. I have treated thousands of cases of it in soldiers, in these and all other usual situations, but never saw an officer die of it, and rarely a serious case, or an attack of it at all among them. This I have never ceased to wonder at, and in seeking its explanation, have sometimes been tempted to refer the disease to contagion. They are not so remarkably exempt from hepatitis. It is, however, chiefly referrible to the greater regularity of life of the officer; for though he takes a considerable portion of spirituous fluids, it is regularly and without inducing intoxication, whilst the soldier will be partially intoxicated for a week or two together; and then, having no longer the power of inducing that state—which is with him the *summum bo-*

num, he reverts to his water-drinking till the next receipt of pay, or till he has hoarded up the means of renewing the excessive stimulus. The prospect of sickness, or even death, have no terrors for him to keep in check this inordinate appetite. And to this circumstance we must chiefly refer the greater prevalence of cholera in the European soldier than the officer. The former is sufficiently clothed and fed, and his frame is generally somewhat robust; there is, therefore, no predisponent debility to account for it. Other circumstances also, doubtless, contribute to produce the superior general healthiness of the officer, as his greater general care of his health and attention to its first derangements; and particularly the greater influence of mind, and the amusement which it creates; for ennui and inactivity of mind, as well as of body, are a great cause of disease, and nowhere so remarkably as in hot climates.

"The greater prevalence of the disease among the sepoys than their European officers, which is as remarkable as in the other case, is to be placed to another account. *They are perfectly temperate*, as are almost all the natives of India, but this temperance is with many of them perforce carried to excess. It is evident that the greater liability to this epidemic of the sepoy than his officer, and indeed of the natives in general, compared with the Europeans in India, is owing to a diet not sufficiently nutritious to ward off the attacks of a disease which is so eminently one of debility, although it is undoubtedly better calculated than ours to obviate the commoner form of Indian disease, pure inflammation. The pay of the sepoy is about fivepence per day, and on this most of them have families as well as themselves to maintain. Yet this is affluence compared with the situation of most of the inferior servants, grooms, tent-men, porters, &c., who receive not more than from half to two-thirds of that sum; and they

again are objects of envy to others unemployed and still lower in the scale. Neither are the prices of the necessaries of life proportionably low. The general diet of the lower classes is rice or other grains, boiled whole or made into cakes, the insipidity of which is in some degree removed by a sort of thick soup composed of vegetables, and a great proportion of condiments; and this food is too often also deficient in quantity. No wonder therefore that we should find so abundant a predisposition to the disease existing among a people thus dieted, and that it should be so often excited into action by exposure to cold and moisture in their wretched huts, or the still more wretched substitutes for tents of the innumerable followers of a camp."

We have attempted in the following table to distinguish between the drunken and the destitute—that is to say, those registered as destitute and dirty were not drunken, although it may be presumed that the intemperate were for the most part neither cleanly nor well fed.

TABLE SHOWING THE HABITS AND CONDITION OF THE PATIENTS, AND THE EFFECT OF THESE CIRCUMSTANCES ON THE MORTALITY.

	Total.	Deaths.	Recoveries.	P. Cent. of Deaths.
HABITS:				
Temperate	183	38	145	20
Intemperate	53	19	34	35
CONDITION:				
Destitute and Dirty	98	33	65	33
Comfortable	138	24	114	17

The return from the Cholera Hospital of Edinburgh does not altogether tally with this; but we must recollect that the great majority of those who go to an hospital are intemperate in their habits; and we should require to know the proportion of temperate to intemperate in the Royal Infir-

mary, or some other larger hospital, before we could come to any legitimate conclusion upon the matter.

	Males.	Females.	Total.
Dissipated.....	37	39	76
Irregular.	13	39	52
Doubtful	2	19	21
Sober.....	43	55	98
Unknown.....	1	0	1

The next predisposing cause we shall advert to is gastro-intestinal disorder, more especially diarrhœa. By the universal consent of all writers, there is a prevalence of diarrhœa about the time of the cholera epidemic. This derangement has been considered of so much importance by the Sanitary Commission, that they have gone the length of calling it the *first stage* of cholera. As this is a point of deep practical interest, lest we should in any way misstate the doctrines inculcated by the Commissioners, we shall quote at length from their Report :—

"The whole tenor of that evidence shows, that the premonitory symptom of an attack of Asiatic cholera is looseness of the bowels. This may be accompanied with pain in the bowels, or it may be entirely without pain. The looseness itself may vary from one to three, six or more additional evacuations daily. The evacuations at this period are generally fæcal, and of their natural colour and odour, altogether unlike the discharges at the more advanced stage, when they are rice-coloured, and without their natural odour. The pain, if any is present, consists merely of the sensation of griping or uneasiness in the bowels; but the discharges, even when accompanied by this uneasy sensation, produce so little inconvenience, that it is difficult to regard them as indications of illness, much less as the commencement of so terrible a malady. Yet this is the real beginning of the dis-

ease, which consists of two stages—first, of this, the stage of simple diarrhœa; and secondly, of the stage of collapse, or blue stage, to which alone the name of the disease, Asiatic Cholera, is commonly applied, all the symptoms characteristic of the malady being present only in this stage.

"The first stage, or that of simple diarrhœa, may continue from a few hours to two, three, or more days. If proper remedies are employed at this period, the progress of the disease is generally and easily checked, and the second stage never comes on; but if neglected, the second stage commences suddenly, with all the violence which distinguishes this dreadful malady. But this suddenness is merely apparent; the disease has been actually present, and has been making progress several hours, perhaps days, and it is the second, the violent, the unmanageable, and mortal stage that has really come on suddenly.

"Any deviation, then, on the side of looseness, from the natural state of the bowels, during the prevalence of Asiatic cholera, is the real commencement of that disease; a single additional evacuation daily, beyond what is natural to the constitution, nay, even a looser state of the daily evacuation must, under such circumstances, be so regarded.

"Asiatic cholera appears to be caused by a poison diffused in the atmosphere, which acts with peculiar intensity on the mucous membrane of the alimentary canal. The irritation set up in this membrane, in most cases, is not violent at first; but if it be allowed to continue unchecked many hours, it produces such an extraordinary change in the membrane, that the thinner and colourless portion of the blood is poured out from it with the same rapidity as it would be if a large opening were made in the great vein of the arm.

"Mr. Hodgson of Birmingham, who has paid great attention to this subject, and who on his examination drew our

attention in a special manner to the important consideration of the means by which cholera may be arrested in its first or premonitory stage, speaking of persons in the second stage, says:—

"'The immense discharge of serum from the blood reduces them to such a degree that they rarely rally. To expect them to rally is like expecting a patient to rally in whom a great blood-vessel has been opened, and from whom nearly all the blood of the body has been drained: the material of life has been taken away to such an extent that few only can sustain it.'

"The view which we have now presented, of the importance of attending to the very first stage of this process, the commencement of which is indicated by any increase beyond the natural discharge from the alimentary canal, is in perfect accordance with Indian opinion and practice.

"'It is,' says Dr. Parkes, 'the universal practice in the Indian army, immediately on the occurrence of cases of cholera, to issue orders directing the attention of the non-commissioned officers and men to the importance of attending to any deviation from the ordinary health, and particularly to any symptom of bowel complaint; and it is a positive order that any man so affected should report himself sick. It is always found that many men at such times do, in accordance with this order, report themselves sick, proving the prevalence of such complaints. Many men, however, do not conform to this order, the affection being often so slight and so entirely without pain, that they cannot be induced to regard so apparently trifling an ailment as disease; hence of the men admitted into hospital, many when seen for the first time present the developed stage of the disease. In the great majority of cases, there can be no doubt that this first stage indicated by this premonitory symptom does

exist. I witnessed two epidemics, the first, the slightest, in which the premonitory symptom was almost universal. In the second, the disease was more rapid, and appeared in some cases to present itself at once in its developed stage. These cases, however, even in India, appear to form an exceedingly small minority.

"'With regard to the duration of the premonitory stage in India, I do not think I ever myself witnessed a case in which the diarrhœa had existed longer than four days, and the usual time would in general be only a few hours; that, however, would afford sufficient time for the application of remedies, capable, in the great majority of cases, of preventing the further progress of the disease.'

"The opinion and practice of Russian physicians at the present time are in perfect accordance with their views. In all the accounts that we have recently received, the medical men who are treating the epidemic which is now prevailing, first and prominently urge, 'THAT THE GREATEST ATTENTION MUST BE PAID TO THE DIARRHŒA,' which they say, 'PRECEDES CHOLERA.'

"From advices which we have just received from Constantinople, we learn that diarrhœa was prevalent and severe in Trebizond during the whole month of August, before cholera broke out in its Asiatic form early in September, and that in those persons in whom the disease advanced to this latter stage, diarrhœa was an early and prominent symptom.

"It is notorious that diarrhœa was extremely prevalent in all the towns of the United Kingdom in which Asiatic cholera broke out in 1832, though at that time the observation had not been clearly and generally made that it constantly precedes an attack, and is in fact the actual commencement of the disease. In the detailed accounts of par-

ticular cases occasionally transmitted from the Local Boards to the Central Board of Health, constant mention is made of the presence of diarrhœa, often two or three days before the violent attack came on. But, perhaps, one of the most interesting and instructive illustrations of the extent to which this premonitory system is present in a population in which cholera is prevalent, is afforded by the remarkable history of the progress and termination of this epidemic at Bilston and the neighbouring district in 1832. This pestilence raged in Bilston with greater violence than in any other part of the United Kingdom. Out of 14,700 inhabitants, 3568 were attacked with cholera, out of whom 792 died in less than seven weeks; that is, one-fourth of the whole population were subjects of the disease, and one-fifth part of those attacked died.

"The Rev. William Leigh, the enlightened and benevolent clergyman of Bilston, whose exertions to mitigate the sufferings of his parishioners during this melancholy visitation were most exemplary and indefatigable, gives the following description of their condition:—

"'The pestilence,' he says, 'continues its ravages amongst us in a frightful manner. Our necessities are increasing every hour, and our resources are fast failing us. Three hundred pounds have been granted to the Board of Health out of the poor-rates; but this sum will not pay for the coffins of the dead. All kind of business is at a stand. Nothing reigns here but want and disease—death and desolation. Two of our medical men have perished; two more have left the place to recruit their exhausted strength; and my respectable neighbours are nearly worn out by mental anxiety and exertion. I have been confined to my house since last Thursday, and nearly the whole of that time to my bed.'

"In this extremity, the inhabitants applied to the Privy Council for medical aid, and Dr. M'Cann, who had seen much of cholera in India, was sent to their relief. The first thing he did was to open a dispensary, to secure the attendance of medical men there night and day, and to placard the town with notices, that whoever was attacked with looseness of the bowels, might receive gratuitously, at this institution, instant advice and relief. Two assistant surgeons, paid by the Board of Health, were in constant attendance, and the resident surgeons of the town, three in number, undertook to visit the institution daily at regular intervals. The dispensary was opened on the 26th of August; on the following day, 270 persons applied for relief for bowel complaints; and in the course of eight days, the number increased to 1100, all of whom, on their personal application, received the appropriate remedies for such complaints at the institution. The effect was most striking; for it appears from the official Report of Dr. M'Cann, that in the course of a single week, the mortality was reduced one-half.

"'I have,' he says, 'the satisfaction to state, that the mortality in Bilston parish from cholera has been reduced during the last week to less than one-half what it was during the preceding; the number of deaths from that disease during those two periods respectively, as taken from the burial registers, has been as follows:—

"'From 20th to 26th August, . . 275

"'From 27th August to 2d September, . 132

"'For this happy change, and happy it is comparatively, we are, I have no doubt, mainly indebted to the beneficial influence of the Public Dispensary for the Bowel Complaints, upwards of 1100 personal applications having been made and attended to at that institution, for such affections, during the last eight days. From this fact, the public may

at once perceive the extent to which disease, a disease, too, connected with cholera, prevails in this district, and at the same time be enabled to form some accurate notions of the advantages to be derived from placing within reach of the poor the means of obtaining prompt and proper relief for bowel complaints in times like the present; for I have no hesitation in saying, that a large proportion of the cases above alluded to, would, under existing circumstances here, have passed into cholera if neglected; and that, of the choleries, a large proportion would have died. In all places, therefore, where cholera prevails, or when it is expected, I would again, as I have repeatedly done before, exhort the local authorities to establish, without delay, public dispensaries, where the poor, without trouble, or favour, or expense, may receive prompt and effectual treatment for bowel complaints. It cannot, indeed, be too often repeated, that *looseness of the bowels is the beginning of cholera*, and that such looseness *admits of an easy and effectual cure*, whilst cholera itself, or that stage of the disease in which vomiting, and cramps, and prostration, are added, or succeed to looseness, is one of the most fatal and intractable diseases known.'

"The following week, Dr. M'Cann reports:—

"'I have again the satisfaction to announce a remarkable decrease in the mortality at this place from cholera: the number of deaths from that disease, in this parish, during the week which has just terminated from the 3d to the 9th instant, (both inclusive,) having been only forty-four, or one-third of the number (132) which had taken place during the preceding seven days. The number of applicants at the dispensary also (new cases) for relief for bowel complaints has undergone a sensible diminution during the last few days; but the daily average for the past week (upwards of 130) is sufficient to show that the epidemic influence still

prevails amongst us, and to a much greater extent than the cholera reports, taken independently, would seem to indicate. We have here, therefore, a new proof or illustration of the good effects resulting from such institutions; for although renewed and indefatigable efforts have been made here during the past week to relieve the wants and add to the comforts of the poor in other respects, yet no one practically conversant with the subject can doubt but that all those efforts must have proved, in a great measure, unavailing towards arresting the progress of the pestilence, if measures had not, at the same time, been adopted to extinguish, as it were, in each individual, according as he became affected, the seeds of that cruel malady.'

"In nine days from this period, namely, the 19th of September, the epidemic was extinguished, and on the same day the Bilston Board of Health addressed the following letter to the Privy Council:—

"'*Board of Health, Sept.* 19.

"'The Board of Health are anxious to convey to the Lords of the Council their grateful acknowledgments for the important and valuable services rendered to the township by Dr. M'Cann during his sojourn among them. To his unwearied diligence in the discharge of his arduous and perilous duties, to his humane and unremitting attention to the poor, and above all, to his wise and salutary arrangements for arresting the progress of cholera in Bilston, the Board feel that, under God, they owe in a great degree the present favourable change in the condition of the inhabitants; and so fully are the Board convinced of this, that they cannot refrain from expressing most respectfully their anxious hope that measures may be adopted, under the sanction of their lordships, for carrying into effect in other places where the pestilence may unhappily prevail, or where its approach may

be apprehended, similar arrangements to those from which they themselves, under God's good providence, have derived such signal advantages.

(Signed) "'W. Leigh, *Chairman.*'

"By similar means, under the same superintendence, a similar result was produced at Wolverhampton, where cholera was prevailing very extensively at the time that Bilston obtained this 'melancholy pre-eminence in suffering.'

"Of the correctness of this account we have received the following confirmation from Mr. Nicholas M'Cann, who states:—That he is a surgeon, and resides in Parliament Street, and that Dr. Francis M'Cann, who went down to Bilston, is deceased, and was a relative of his. He died two years ago. He had been in India, and was well versed in the treatment of cholera.

"'I was perfectly familiar,' continues this witness, 'with his treatment at the time, and adopted it. Whenever I was called in early enough to take advantage of the premonitory symptoms, I usually found his treatment successful, never once losing a patient. In the police division, which was under my care, I scarcely lost a man; the order being from me for an early application upon any disordered or relaxed state of the bowels. Some certainly were lost, where the premonitory stage was not taken advantage of, according to the plan of treatment I pursued. At the period cholera made its first appearance in Westminster, in the years 1831 and 1832, the opportunity then afforded me was extensive, being connected with the largest and only dispensary in the neighbourhood of Parliament Street, and also being surgeon to the metropolitan police.

"'From my own observation and experience, I have arrived at the conclusion that in ninety-nine cases out of every hundred, the premonitory symptoms (in other words, diar-

rhœa) precede each and every attack, showing the necessity of making the earliest application for medical aid, and the great danger the patient incurs in neglecting such a necessary precaution.'

"Mr. Hodgson, one of the two medical officers appointed by the Government on the Board of Health at Birmingham, states, that in consequence of his connexion with the Cholera Board, he paid great attention at the time to all the circumstances connected with the disease; that—

"'The disease raged very much at Bilston, and went on to a frightful extent, till the Government sent down to Bilston Dr. M'Cann, who had seen a good deal of the cholera in India, and I believe, in Persia. When Dr. M'Cann came to Bilston, he formed a cholera dispensary, or dispensary for bowel complaints, and drew attention very strongly to the importance of attending to the premonitory condition. He told me, and almost everybody *whom I have talked with who knows anything about the subject* confirms it, that they never knew an instance of any person who had the second stage, who had not the premonitory stage, perhaps only to a slight degree. I remember hearing of some ladies being attacked who were out at a party one evening, one of whom was dead the next day: but even in those instances, if you could learn the particulars, you would find, I believe, that there has been the premonitory stage of diarrhœa to a greater or less extent.'"

In order to establish the proposition that diarrhœa is the first stage of cholera, it must be shown either that it is always observed to be present, or that its absence can, in some way or other, be satisfactorily accounted for. If a previous diarrhœa be an essential part of cholera, and it must be granted that a disease is not perfect if it have not its first stage, then we should expect to find that those excep-

tional cases in which the diarrhœa was absent, presented an abortive form of the complaint. To induce us to call it the first stage, it must be very constant. If in a very considerable number of cases it is absent, then we are not entitled to look upon it as essentially related to the cholera. If it were a very unusual phenomenon, then indeed from its frequent attendance upon cholera, and cholera alone, we might be inclined to consider them as very closely allied. If it never preceded any other disease except cholera, the evidence in favour of the views just stated would rise in value. Lastly, if there were no other plausible explanation of its occurrence, except as a part of the cholera, we might throw the blame of it upon this epidemic for want of something else.

Is diarrhœa a constant attendant or precursor of cholera? and when absent, does cholera appear in a modified form? These two questions we shall answer simultaneously by giving a few individual cases when the absence of the diarrhœa was certain; then some examples of large bodies of men who seem to have had cholera without having previously had diarrhœa; thirdly, the general testimony of practitioners in India; and lastly, the statistical returns afforded by our own observations.

Our first example shall be that of a physician who was familiar with all the symptoms of cholera. Dr. Quin* thus describes his own seizure,—"I was suddenly attacked by cholera during dinner, *without any premonitory symptoms.* I fell down senseless." After describing the effects of the remedy he took, which mitigated the symptoms, he says, "I had no diarrhœa, although at every instant the violent cholicky pain made me think it was going to come."

The two following cases occurred in our own practice, and we made particular inquiries whether there had not been some

* Du Traitement Homœopathique du Cholera, p. 52.

diarrhœa or gastro-intestinal derangement; for our opinion at the time we saw them was quite unformed upon this point, and we were anxious for any facts which bore upon it. They may be taken as specimens of the cases entered in the table which we shall afterwards give, as "without gastro-intestinal disarrangement."—

"P. M., aged 46, a man of intemperate habits, living in a close room, with several other persons of both sexes, in a filthy lane of the Grassmarket, had been in his usual health, *and had no diarrhœa till 5 o'clock*, A.M., of the 20th October, when he was suddenly seized with vomiting and purging. When seen for the first time at 10, A.M., we found him out of bed, standing almost naked on the floor; he said he had risen on account of the violence of the cramps. The surface of the body was quite cold, the tongue cold, the pulse could not be felt, the toes were quite turned in by the cramps, and he complained much of the violent pain in his legs. He was vomiting and purging a watery fluid.

"He died at a quarter before 10, P.M., seventeen hours after seizure, and twelve hours after first visit."

"R. A., aged 22, a man of sober, industrious habits, living in a comfortable room, *without feeling unwell*, took a dose of salts and senna as a precautionary measure, on the morning of the 22d of October, which operated in the course of the day. At 4, P.M., he was seized with vomiting, purging, and cramps. When seen at half-past 7, P.M., the surface of the body was cold and dark blue in colour; the pulse was felt like the finest thread; the jaw was hanging, and the eyes open, glassy, and turned up; the tongue and breath were icy cold; the voice a hollow whisper; there was great thirst, watery vomiting and purging, and violent cramps in legs and arms.

"He died half-past 1, A.M., of the following morning, nine hours and a half after seizure, and six hours after first visit."

We could multiply examples of this kind to almost any amount; but having shown what is meant by a sudden seizure, we shall give some instances of the occurrence of such among large bodies of men.

"The first was in a body of five thousand troops at Ganjam, 1781. 'It assailed them with almost inconceivable fury at that place, on the 22d March. Men in perfect health dropt down by dozens; and even those less severely affected were generally dead, or past recovery, in less than an hour. Besides those who died, above five hundred were admitted into hospital that day. On the two following days the disease continued unabated, and more than one-half of the army was then ill.'"*

Again,—

"Dr. Kennedy, in his treatise on cholera, relates that he was at Surat when a native corps left that station, in November 1819. They were in high health, having had a few slight cases of cholera in October, but before the march they had all disappeared. He followed them a few days after on the route to Baroda, a distance of eighty miles; and hearing nothing of cholera on the way, he was astonished on arriving there to find the corps suffering from it in its worst form, their casualties being from eight to fifteen daily. 'The weather was cool and pleasant. There was really nothing to which, by ever so far-fetched a reasoning, we could ascribe the situation of these poor people. The rest of the cantonment enjoyed perfect health, though breathing the same atmosphere, drinking water from the same wells, and procuring provisions from the same bazaar, whilst the most unrestrained intercourse existed between the infected battalion and the other two healthy battalions of the station. The city of Baroda and its suburbs were reported to be unaf-

* Orton, op. cit., p. 353.

fected ; nor have I ever learned that the disease then existed in the adjacent villages ; and yet this solitary insulated body of hardy soldiery, in the vigour of manhood and exciting preparations for field-service, encamped upon a dry and open spot of as healthy ground as any in the neighbourhood, within the lines of a populous cantonment, and only a mile distant from one of the largest cities in India, seemed devoted alone to 'the pestilence that walked in darkness, and the destruction that wasted at noonday,' without any assignable cause, but that the seeds of the disease might have been sown in their constitution during the month of October, at Surat. Finally, the pestilence ceased as inexplicably as it had commenced, after having in less than three weeks nearly decimated the battalion."

Our next quotation shall be from the work of Mr. Scot,* to which we have had occasion to refer frequently before. His work is the summary of the Madras Report, which extends to 550 folio pages, besides his own opinion. It is the work of a man of undoubted talent, and of great experience.

"This most formidable disease does not appear to be attended by any premonitory symptoms which can be regarded as being at all peculiar to it ; on the contrary, we may safely assert, that it is of sudden invasion ; for, though a slight nausea, a laxity of the bowels, and a general feeling of indisposition are often found to precede cholera, yet these symptoms are evidently common to many other diseases ; and they are especially frequent in this climate, without being followed by any graver ailment. When such symptoms are found to precede cholera, they might with more truth be regarded as indicating merely a certain deranged state of the alimentary organs—a condition of the body which certainly predisposes a person to an attack of cholera."

Out of 236 cases treated at the Edinburgh Homœopathic

* Op. cit., pp. 42, 43.

Dispensary, in 125 there had been gastro-intestinal derangement, and in 99 there had certainly been none; the remainder are entered as enfeebled by disease. If they be added to the number who had no gastro-intestinal derangement, then we should have 111 cases without this premonitory symptom, and 125 with it. Let it be observed, we have included all forms of gastric disorder. Had we confined it to diarrhœa, we should certainly have had less than-one half who had not this symptom, which has been called the first stage of cholera, and we should observe that, beyond all doubt, the most severe cases were those in which it was absent.

We shall now consider the second question suggested by the Report under review, viz., Is diarrhœa a rare disease, and one which precedes no other malady but cholera? Fortunately we have not far to go for a reply to this question; for in the same Parliamentary Report,* occur the following words:—

"From returns to inquiries which we addressed to the medical officers of the metropolitan Unions, with a view to ascertain the present state of disease in their several districts, and particularly among that portion of the population in which cholera chiefly prevailed at its last visitation, we learn that diarrhœa, in some localities, is, at the present time, co-extensive with typhus, and that in a few it even predominates. It must be borne in mind that the impure atmosphere which so powerfully predisposes to cholera, when that disease is epidemic, predisposes to diarrhœa, whether cholera be epidemic or not; that diarrhœa is the constant precursor of typhus, as it was in 1832 of cholera; that diarrhœa and typhus frequently pass into each other, and that diarrhœa, like typhus, is never absent from certain undrained and filthy localities, where it divides the reign with typhus, and produces the like mortality."

Again, in the same Report,† we have a reply to the part of

* Page 26. † Pp. 27, 28.

the question which refers to the frequency or rarity of the disorder:—

"That some conception may be formed of the actual extent of the prevalence of diarrhœa at the present time in certain localities of the metropolis, we cite the following statements, rather as an example than as a full account of the answers returned to our inquiries by the medical officers of the metropolitan Unions, these statements referring to the amount of disease among the pauper population only. From the Lambeth return it appears that there have occurred in this district within the last six months, chiefly in seven short courts and alleys, 638 cases of diarrhœa, together with 77 cases of typhus and 72 of scarlet fever. In one district in the parish of St. George the Martyr, Southwark, there are reported 113 cases of diarrhœa and 187 of typhus; in another district 51 of diarrhœa and 91 of typhus; and in a single street, 20 cases of diarrhœa, 11 of typhus, and 3 of scarlet fever. In Bermondsey, in 12 streets, with an average of 18 houses in each, there were 120 cases of typhus; and in another part of the same district, 50 of typhus to 18 of diarrhœa. In Deptford there were 48 cases of diarrhœa, with 30 in addition, that passed into English cholera, together with 186 of typhus and 88 of scarlet fever. In Whitechapel Union, in 10 streets, of about 17 houses in each on an average, there were 642 cases of typhus to 126 of diarrhœa. In Christchurch, Shoreditch, there were 426 cases of diarrhœa, many of which passed into typhus, the amount of typhus and scarlet fever together being 722. In Holywell, Long-alley, and its neighbourhood, there were, of diarrhœa, 210, of typhus, 259, and of scarlet fever, 30 cases.

"In the suburban and less crowded districts, it is stated, that in certain spots in Wandsworth, diarrhœa constantly prevails, together with typhus; and that in those places the

same persons have been repeatedly attacked in the course of the last six months. In the pleasant village of Hampstead, where such an amount of disease could hardly have been expected, there occurred 78 cases of diarrhœa and 58 of typhus; and of these, 18 of diarrhœa and 34 of typhus took place in one street of only 26 houses. In the Hackney Union there were 269 cases of diarrhœa to 66 of typhus; in West Hackney, 44 of diarrhœa to 3 of typhus; and in Tottenham, 62 of diarrhœa to 12 of typhus."

We feel ourselves entitled to conclude, from the facts we have stated, that cholera in its most destructive form very frequently occurs without any previous diarrhœa, and that diarrhœa may prevail extensively without there being any cholera at hand; and therefore diarrhœa cannot be considered a first stage of the cholera, but must rank simply as one of the predisposing causes.

We should gladly leave the matter here, for we feel it to be somewhat presumptuous to enter the field against the Sanitary Commission in reference to the advice they give for warding off so terrible a plague as cholera. But when we reflect that the lives of millions are likely to be more or less risked by recommendations issued from so high a quarter, and sure to be generally diffused by the periodic press through the country, we feel it would be wrong of us not to enter our protest in the most emphatic way against the method proposed to combat this so-called first stage of the epidemic.

Under the head of the "Mode of treatment of the premonitory diarrhœa so as to arrest the disease entirely,"* we find the following law of cure laid down:—

"With regard, therefore, to the means of prevention to be taken by individuals against an attack of cholera, should

* Op. cit., p. 22.

this pestilence again return, the first and essential precaution is instantly to stop looseness of the bowels. The means of accomplishing this are simple, if the proper remedies are employed immediately the looseness comes on; and the proper remedies are aromatic, opiate, and astringent medicines; twenty grains of the opiate confection, for example, taken in peppermint water, weak brandy and water, or the common chalk mixture, and repeated every hour until the relaxation of the bowels ceases. By this simple remedy, if employed in this early stage, the evidence adduced justifies the expectation that the progress may generally be arrested of a malady which, if allowed to advance unchecked to its second stage, is the most fatal and intractable disease known; in the treatment of which the most opposite modes of practice—the most powerful and the most inert remedies—bleeding, brandy, opium, calomel, ammonia, quinine, croton oil, cold water, the warm bath, the cold affusion, all varieties and contrarieties of treatment possible, have been employed alike in vain."

As we might expect, the popular instinct soon strips this passage of its euphuism, and for opiate confection, weak brandy and water, peppermint water, and chalk mixture, reads, opium and brandy—*the simple remedy*, which it is quite plain the Commissioners had in their eye. In Scotland, however, where brandy is dear and whisky is cheap, they take the liberty of altering the recipe of the Commission to suit the necessities of the case.

If it were quite certain that opium and brandy really prevented cholera, we cannot but think that a wise legislature should have hesitated before recommending for popular use drugs, an indulgence in which is so ruinous to the health, and whose operation is of so fascinating a nature, that if once allowed to become a habit, it requires superhuman self-control to break the destructive thraldom.

Surely the bitter self-accusations of some of the most gifted men that have adorned and instructed our country, might have acted as a warning against sowing broadcast over the land so deadly, and yet so insidious a poison. We repeat, if the alternative were put, as one was to David, whether we should prefer a brief and fatal *epi*demic of cholera, or the risk of a great increase of an *en*demic habit of intoxication by ardent spirits and opium, the former would be the kinder and wiser of the two to choose.

We have put the case on the best footing for the Commission; but we must bring it down a long way, for we are satisfied that opium and brandy do not cure diarrhœa; and if they did cure it, they would often leave the patient in a worse condition for what was to follow than if he had been let alone.

We have had numerous examples of cases such as this. When the cholera prevails in a place, diarrhœa also prevails. A nervous person gets an attack of looseness of his bowels; he sends for his doctor, who gives him a tea-spoonful of laudanum to make sure against cholera; the diarrhœa stops, but the bowels are bound, and some headach comes on; again the doctor is sent for, and he gives a purgative, the headach goes off, and the looseness returns; in a greater alarm than ever, his medical adviser is recalled; again he gives a good large dose of opium in some form, with the same effect as before, only, that now giddiness and sleeplessness are superadded to constipation. What is to be done next? Another purgative? that will endanger the return of the diarrhœa—leave him alone? that will bring on a state of constipation almost as dangerous as the diarrhœa. We do not know what better the patient can do than immediately leave the place, and get out of the hands of his most dangerous medical friends; if not, he may have to go on taking opium and

laxative medicines alternately for weeks together, till delirium tremens comes on, which, in our opinion at least, is a worse disease than cholera. We are not stating hypothetical cases. We know such cases have occurred. This has happened especially to females approaching their confinement, and in some instances has rendered this simple and natural process one of extreme danger, distress, and anxiety; we believe it has even produced fatal consequences.

But suppose the diarrhœa, for which we have been so assiduously giving our opiate confection and brandy, should happen to be the precursor, not of cholera, but of scarlet or typhus fever, what would be the consequence? Let any hospital physician be asked whether he would consider the risk from these diseases augmented or lessened by the patient having previously taken large quantities of brandy and opium? We are not putting an imaginary case, but what we ourselves have seen; for example, when the cholera was at its height in Edinburgh on the 30th of November, we were sent for to see a little boy of eleven years old, who was reported to be ill of it. We saw him at four o'clock in the afternoon; he had been quite well till ten o'clock that morning, when he was suddenly seized with *watery purging and vomiting;* his pulse was 140, and weak; he was giddy; his tongue was natural, and of the usual temperature. Here was a case of incipient cholera surely, and proper for opium and brandy, which, however, we did not give. At nine, P.M, his pulse was lower, and he had vomited less. On the following evening he was covered with a red eruption, and the usual symptoms of scarlet fever appeared. He recovered. We may state the case thus for the popular understanding: Typhus fever, scarlet fever, and cholera, all begin occasionally with looseness of the bowels. This looseness is sometimes cured by opium and brandy, but neither the typhus

nor scarlet fever is prevented by its being so cured, and the danger of these diseases is increased by the drugs; if the looseness be the precursor of either typhus or scarlet fever, the person is certainly in a worse condition after his dose of opium than if he had been let alone, and it is very doubtful whether the cholera be kept away or not by stopping the diarrhœa in this manner. In these circumstances, is it right to give opium indiscriminately for diarrhœa when cholera, typhus fever, and scarlet fever, are all raging together in the same locality?

We have yet other two objections to the opium and brandy; the first is, that one great source of mortality in cholera treated by the old school, is the consecutive fever; this is certainly not improved by the patient having previously taken stimulants and narcotics.

Our last objection is on moral grounds. Cholera is a disease of the poor, and drunkenness is a vice of the poor. Let it be understood that opium and brandy are good for cholera, and the poor are too willing to believe that it cannot hurt them to take these drugs as a preventive measure. Let us record what we ourselves saw. In a flat in the old town of Edinburgh a case of cholera occurred. The subject of it was a strong sober man; he was ill only a few hours, and died. Two days afterwards we were sent for to see a woman lying in the adjoining apartment, also very ill of cholera. We found her in a state of collapse, and gave her some medicines, along with strict injunctions as to her management. This was about nine o'clock in the evening. We returned in about two hours. There were five women and a man in the room sitting round the table drinking spirits. We asked them if they had no fear of death? and one of the women replied, that a doctor had been up, and told them there was nothing like brandy for keeping off cholera. The poor

dying creature was almost breathing her last. She had been left lying as if she were already dead. She had got no medicine, and no attendance, and she died within an hour. We warned the party of the consequences of their revolting conduct, and that some of them would soon take cholera if they spent the night in drinking there, as they seemed inclined to do. This seemed rather to amuse than alarm them, so we went away, and observed to one of the women, who staggered to the door with a light in her hand, that if she went on as she had begun, she would not have long to live, and that perhaps she hardly felt prepared to die. She laughed. Next day she took cholera, and died; another of the same party took it the following day, and also died.

The cholera is a dreadful thing to witness. It is the most terrible form that death can present. Yet it is a positive relief to turn from the living in a state of brutal drunkenness —all pity and every human feeling drugged to death—to the poor dying creatures who suffer from the visitation of God and not from their own criminality.

During the prevalence of cholera in Edinburgh, a very large number of patients labouring under diarrhœa applied to the Homœopathic Dispensary, and we do not recollect a single instance in which the "simple" remedies given, which were chiefly *Mercurius solubilis*, *Arsenicum*, and *Acidum phosphoricum*, were not sufficient to arrest the complaint.

EXCITING CAUSES.

The exciting cause of epidemic cholera may be stated to be a specific poison, or morbific influence of telluric origin, but capable of being reproduced, in some instances at least, by the organized beings which are affected by it, and the manifestation of its baneful effects is accompanied generally by an unusual degree of humidity, either atmospheric or local;

and we may add that a derangement in the weight, heat, and electric condition of the air have been frequently observed to attend an outbreak of the disease. Unwholesome food may also perhaps be mentioned among its existing causes.

That cholera is produced by a specific poison is generally admitted by writers upon the subject. As to the essential nature of this specific miasm we are entirely ignorant; and we do not think it would serve any useful purpose to enter into a discussion upon the various hypotheses which have been proposed. For the most part the explanation offered to account for the mode of action of any one miasm will not cover the whole question; and this, in our opinion, is a fatal objection, for it is obvious that they present but one problem; and the true solution, when it comes, will explain all the varieties of the phenomenon.

The telluric origin of this poison seems clearly indicated by the sudden way it breaks out in various places at the same time, and its continuance in some situations; resembling in this particular the malaria from the Pontine marshes, the campagna of Rome, or from the unwholesome ground in the neighbourhood of some volcanoes, as for instance the country about Pæstum.

The connexion of the morbid emanation with the earth is further proved by the curious fact that there is no instance on record of a ship from Europe having a single case of this disease on board until it has had communication with the shore.*

As to its being reproduced by those affected by it—this is equivalent to its propagation by contagion, at least the latter proposition almost necessarily involves the former. The following extract from the British and Foreign Medico-

* Scot, op. cit., p. 82.

Chirurgical Review for January 1849, expresses and illustrates the general opinion upon this point:—

"About 250 miles north-west of Madras, a range of lofty hills, called the Copper Mountains, forms the western boundary of an immense plain. A spectator standing at the base of the hills, and looking to the north and east, gazes over a vast expanse of country, which, nearly as far as the eye can reach, forms an almost uninterrupted and level surface. About six or eight miles away from him, however, a rounded mass of rock towers up abruptly from the plain, and breaks at this point the uniformity of the view. This is not one of those limestone rocks common in some parts of India, which are formed by the evaporation of water deeply charged with calcareous salts. This rock is granite; about half a mile in diameter, and some 500 feet high. On its bare surface only a scanty vegetation grows, and the soil at its base is equally sterile and dried up beneath the fiery rays of the Indian sun. Such is the rock of Bellary; and till within the last three or four years, the European barracks were situated in the Lower Fort, built on one of the inferior portions of the rock. There are no marshes, no rivers, no dense and exuberant vegetation which may afford to cholera a congenial soil; and yet since 1818 cholera has never for a single year been absent from Bellary, and the place of burial of each successive regiment bears sad testimony to its permanent and unrelaxed activity. And it is evident that it is something connected with the rock itself, which has to do with this development of cholera. The disease hangs about the Lower Fort, and rarely travels any distance from it; it prevails severely in the barracks on the rock, in the native town and bazaars immediately adjoining, but it has almost uniformly spared the native lines and the adjacent buildings which are situated some three miles away. It

is one of those striking examples of localization to which we formerly referred. The causes of this prevalence are to be found in the fact, that never were men placed under worse hygienic conditions than those living or quartered in the Fort. For military reasons, the space given to the buildings of both Europeans and natives is exceedingly limited; the houses are densely crowded, and a numerous population is, or used to be, compressed into a space inconceivably small. Close to the European barracks are two dirty bazaars, which have long been considered as public nuisances. A large tank, which in the hot season becomes nearly dried up, furnishes its supply of effluvia; and a very inefficient supervision of the barracks themselves till lately allowed the emanations of a large body of men to furnish assisting conditions in aid of the poison."

The humid state of the air which precedes or attends the outbreak of the epidemic, has been noticed by many writers. Dr. Orton, observes,—"I have been personally informed by an intelligent officer who witnessed the different attacks of the epidemic in Brigadier-General Smith's force, at Seroor and other places, that they were *always* accompanied by a cloudy, overcast state of the sky, sudden showers composed of large drops of rain, resembling those of a thunderstorm, and a thick 'heavy' state of the air, giving it a *whitish* appearance; and whenever the weather cleared up the disease disappeared. He particularly observed, that the epidemic was invariably preceded and accompanied by a large black cloud hanging over the place; and added, that this had been universally remarked, and that the appearance had even received the name of the *cholera cloud.* All these remarks were made without any questions or suggestions from me which could influence their tendency."*

* Op. cit., p. 174.

Dr. Adair Crawford confirms the statement:—

"Many observations prove that a damp state of the atmosphere is one of the circumstances the most favourable to the development of the disease. This is the general condition of the air along rivers and lakes, where the banks are often marshy, and covered with mist. In 1831, when the cholera broke out in the Polish army, while contending with the Russians on the banks of the Vistula, it was observed, (as reported to me by Dr. Dalmas, who had been sent to Poland by the French Government to study the disease,) that whenever the Polish army occupied low and marshy positions along the river, there was immediately a rapid increase of the cholera among the troops, and that each time they removed to higher ground the disease immediately decreased."

It were easy to give more instances of a similiar kind, but it would serve no purpose; it is enough to say that a humid state of the atmosphere has frequently been observed to attend the epidemic cholera, but that it is not essential to the production of the disease. The evil effects of a humid locality in increasing the risk of cholera have been established by the history of the epidemic in its whole course. To begin with India,—

"Seringapatam is one of those noxious spots so devoted to fever, that they should be shunned by man as a residence if he is unable to remove the cause. It lies in a basin, formed on all sides by hills, and is surrounded to a considerable distance by rice-fields, watered from canals drawn from the Cauvery, and carried off at considerable angles from the river along the sides of the neighbouring heights. The ground between them and the parent stream is formed into a succession of terraces, and thus kept continually overflowed whilst the grain is growing, but suffered to dry up for its

ripening. To the miasmata thus produced I have always attributed the fevers which prevail there; for there is neither swamp of any other description nor wood for a great distance, and the natural soil is a dry, reddish, sandy substance, consisting almost entirely of decomposed granite. Here, as in all other similarly unhealthy places, the epidemic (cholera) prevailed to an extraordinary degree. Mr. Scott states, that it appeared, from the best information he possessed on the subject, that the mortality was greater there than at any other place in the Peninsula. Very different was the case at Bangalore, lying on an eminence seventy-five miles to the westward, 700 feet higher than Seringapatam, and 3000 above the sea: it is the highest ground of the Mysore, and the coolest and healthiest station on the establishment. It was never visited by the epidemic but in a very trifling manner.

"After adverting to the attraction of the choleraic poison for moisture, and the remarkable predilection of cholera for all places where human beings are thickly crowded together, and where the effluvia from the excretions are consequently abundant, Dr. Parkes, late an army surgeon in India, describes the rise and progress of two epidemics which he witnessed; one in 1842, at Moulmein, in the Tenasserim provinces, and the other at Madras, in 1845, both being, he says, fair types of the general manner in which cholera spreads in India.

"'Some time in the early part of 1842,' he says, 'cholera appeared in the northern parts of Burmah, and, passing in a southerly direction, committed great ravages, and caused great consternation at Ava and Ameerapoora. After traversing these cities, it passed down to Rangoon, pursuing the course of the Irrawaddy and its tributaries, and attacking chiefly the towns and villages situated on the banks of these rivers. Still pursuing a southerly course, in August it appeared in

the Burmese town of Martaban, situated on the junction of three great rivers—the Salween, the Attaran, and the Gyne, and nearly opposite to the British settlement of Moulmein.

"'In September, it appeared in Moulmein, and continued to prevail with greater or less violence till July 1843, when it disappeared, although an isolated case was occasionally seen during the two following years. Soon after its entrance into Moulmein, it was reported to have appeared in the villages to the south, on the banks of the Salween, and on the sea side, and then still travelling due south, it reached in November the second principal Burman town, Tavoy. Tavoy is a place of considerable size, and is situated about 150 miles south of Moulmein, on the banks of a broad shallow stream, loaded with debris from the neighbouring mountains. Cholera raged here with great fury for three or four months, and then gradually disappeared. Soon after entering Tavoy, it was heard of in the villages round the city. Travelling south, it showed itself shortly afterwards (some time in January 1843) in Mergui, the third principal town in the provinces, situated on a small island, formed by two branches of the Tenassarim river, opening into the Bay of Bengal, 150 miles to the south of Tavoy.

"'During this progress from the north towards the south, cholera attacked chiefly, or exclusively, the towns and villages stationed in low marshy places, on the banks of rivers, or on the shores of the sea. It did not extend inland, and the Burmans were accustomed to escape it by leaving their houses and travelling into the jungle. Directly the first death occurred in any village, the men deserted their fishing or their paddy fields, and betaking themselves to their endless forests, preferred the chances of famine and the dangers of the jungle to the risks of exposure to the attacks of cholera. They universally stated, that though they were

left without food by this flight, and were exposed to the burning noon-day rays, and to the heavy tropical dews at night, cholera universally left them after the third or second day's march inland.

" 'For many months the disease at Moulmein was confined almost entirely to the houses situated on or over the river, and chiefly to the south end of the town; one side of the main street runs close to the river, and the great majority of cases occurred on this side; comparatively few on the other.

" 'The only Europeans attacked at the commencement of the epidemic, were the sailors belonging to the ships in the river. The ships nearest the shore suffered most. Thus nine cases occurred on board Her Majesty's brig Britemorte, lying close in shore; she was moored about a mile away into the centre of the stream, and no more cases occurred. Three cases occurred on board Her Majesty's brig Syren, also lying in shore; she was also moored into the centre of the river, and cholera immediately ceased. The 63d regiment sailed in September and October 1842, for Madras. One transport brig, accidentally detained three days in the river, had fourteen cases of cholera during the voyage; the other transports, four in number, got to sea at once, and had no cholera. A few cases occurred during this time among the Europeans on shore, but these consisted only of those who lived close to the river.' "

It does not confine itself to swampy ground, but seems to affect rivers as well as pools.

" Mr. Jameson says, 'From the rise of the disorder on the banks of the Ganges and Burrampooter, to its arrival at the mouths of the Nerbudda and Taptee, this has excited the surprise of the medical observer. Thus from Sunergong in the Dacca district, where the epidemic broke out in July

1817, it crept along the banks of the Megna to Narriangunge and Dacca, attaching itself chiefly to the ferries and market-places in its vicinity. In like manner, it afterwards advanced step by step up the Burrampooter, affecting, during its transit, the villages situated on both its margins. From the mouth of the Hoogly, to its termination in the Ganges, near Moorshedabad, the same peculiarity was observable. The shipping at the new anchorage at Diamond Harbour, and along the whole channel, as high as the Hoogly, was particularly affected, and almost every village adjacent to its banks buried many of its inhabitants. In the Bhaugulpore district, the propensity was so strong, that the virus scarcely ever spread into the interior, whilst it almost depopulated the low lands near the Ganges. Again, in the autumn of 1817, Moozufferpore, and the villages along the Gunduk river in Tirhoot, and the station of Chupra on a branch of the Ganges in Sarun, were alone visited, while at a subsequent period the disease was thence communicated along the Gogra to numerous cities in the north-east quarter of our territories. From Allahabad upwards, along the channel of the twin branches there forming a junction, until the river was lost under the hills, it wavered so little from the line of those rivers, that hardly a town or village lying remote from their course was brought within its influence. Without going further over our old ground, let us briefly state, that the same rule held yet more unexceptionably in Rajpootana, through the province of Bundelcund, and all along the Nerbudda to the numerous branches of the Chumbul.' "*

We believe that the immense difference in the severity of the cholera in Edinburgh and Glasgow finds its explanation in the local rather than any other sanitary condition of the

* Orton, op. cit., pp. 410, 411.

two cities. In reference to this interesting point, we may quote a few sentences from a recent article in the British Journal of Homœopathy :—

"The only general observation upon this head we are inclined to make, refers to the topography of Edinburgh as compared with that of Glasgow. By universal admission, the cholera has an affinity to water. While by some mysterious law of progression, it has moved by steady steps in all kinds of weather, from extreme cold to great heat, against high winds, over every variety of country, from an easterly to a westerly direction, until it has now almost encircled the globe, it has preferred the courses of rivers for its local direction. In Scotland, it has moved up the Firth, the Clyde, and the Tweed. The topography of Edinburgh is very peculiar. It may be described as composed of two deep narrow valleys, one little better than a large ditch, and surrounding heights. In the valleys, particularly in the narrowest and deepest, are built old houses, very close together, and occupied by the poorest of the people, and the most dissipated: it is called the Cowgate. The other valley is but partially covered with houses ; it runs between the ridge of the old town and the new. These narrow valleys are bridged over. The higher grounds are covered for the most part with newly built houses. In the new town, which lies at the north side of the second or wider valley, the houses are spacious and scattered over a large space of ground. There is little or no direct communication between the inhabitants of the new town and those of the worse parts of the old. There is a moral as well as a physical gulf between them. The rich pass over, not through the town of the poor. Hardly a case of cholera appeared in the new town, its ravages were confined to the old town, especially the narrow valleys and the houses covering their steep sloping sides.

"Glasgow presents a total contrast. The city is built in the bosom of a plain on both sides of the Clyde. There are eminences covered with houses, where the best (so called) part of the community reside, but there is no abrupt transition between their habitations and those of the poorest. It is a level surface, going off at parts in inclined planes. Here the cholera confined itself to no particular localities, it spread generally over the whole town, affecting all ranks. We believe the difference between the intensity and diffusion of the disease in the two places to be sufficiently accounted for by their relative topographies."

In speaking of the predisposing causes of cholera, we described the mode of cure of some of them; and here, too, the question naturally suggests itself, can nothing be done by draining, or other such means, to prevent the occurrence of cholera? To enable us to reply to this satisfactorily, we have purposely divided the observations upon humidity into three classes: the first, the humid atmosphere; the next, the damp locality; and the third, running streams. We cannot prevent a humid atmosphere, neither can we dry up rivers, nor would we if we could, but we can drain moist unwholesome soils about towns; and if these towns be not situated upon rivers, they may remain altogether exempt from the cholera. We know no better illustration of the evil effects of a bad sanitary state of a town in giving rise to cholera, or at least tending to its development, than what was observed at Paisley.

It may be incredible, but it is not the less true, that a considerable part of that town, which has always been distinguished for the industry and intelligence of its inhabitants, many of whom have become celebrated over all the civilized world, situated, too, in a well-watered country, "in the land of the mountain and the flood," should be so wholly

destitute of water, that the only way it can be got is by *stealing it during the night.* The report says :—

" It (*i.e.*, fever) is found generally in tenements kept in a filthy and abominable condition, and chiefly in lands where the town's water is not used. The occupiers of these lands are the poorest of the poor, the lowest of the low, the dissipated and the diseased—all grovelling in nuisances of the worst description. No water for domestic purposes, *except what is stolen during the night in a small pitcher*—no water for personal cleanliness—and no water to wash away the numerous nuisances accumulating around their dwellings."*

We repeat, that it is hardly credible that such a state of things should exist in a country boasting of its civilisation ; and it is no wonder that persons so neglected should be the prey of typhus fever and cholera—both diseases attended with *intense thirst*—and no water to be had but what was stolen at night in a small pitcher !

" According to the experience of the above tables, they show that out of every *hundred* cases of cholera that have occurred in the Town proper, 35 have happened where the town's water is used, 17 have died, and 18 recovered ; and 65 cases have occurred in properties where the town's water is not used, 41 have died, and 23 recovered. It must, however, be kept in view, that the landlords of a number of the worst properties in town pay for the water to their tenants, to prevent disease. One of these tenements contains a population equal to the adjoining parish of Inchinnan ; and the poor inhabitants of that property are also equal in another respect to their rich neighbours of Inchinnan, by not paying any poor-rates.

" In making another calculation, inclusive of Charleston

* Paisley Fever and Cholera Report for 1848-49, p. 1.

cases, it shows that out of every *hundred* cases of cholera occurring, 12 will happen in properties using the town's water, 6 of whom will die, and 6 recover; and 88 will happen in properties *not* using that water, 44 of whom will die, and 44 recover."*

We may mention an incident that came under our notice in Edinburgh in connexion with the want of water. A considerable time after the cholera had been in the city, the authorities began to take measures for cleansing the worst part of it. To do this they drew water from the city wells, which supply the poor with water. To prevent the supply to the engines used to wash the houses from running short, they locked up the wells at night. The consequence was, that many families who had not time, or had neglected to get water in the day-time, had none all night. The cholera generally occurs at night. A poor man was ill of it, and during the night his daughter, who had been attending him, was seized with the disease; all the water was done, and in a state of intense agony from thirst, she rushed out to get some from a neighbour, and struck herself on the door. She fell to the ground, from which she could not rise, but was lifted to her bed, where she soon died. This is a digression; but it is to show the horrible inhumanity of depriving the poor of water at a time when they are exposed to cholera.

We may conclude, then, that while we cannot avert the plague from such towns as Edinburgh and Glasgow—the former exposed to a damp atmosphere, the latter situated on a river—we may prevent it altogether, or at least greatly mitigate its severity, by judicious sanitary measures in such towns as Paisley.

The impression upon the mind of almost all observers of cholera seems to be, that at the time of its prevalence, there

* Paisley Fever and Cholera Report for 1848-49, p. 2.

was something unusual about the weather; it was unnaturally hot, cold, wet, or stormy. Dr. Orton, who strongly advocates this opinion, has collected a number of testimonies in favour of this belief. We may quote some of the most striking:—

"The epidemic appeared and prevailed in its greatest violence at Bombay in the latter part of August. Mr. Jukes, who was stationed at Tannah, on the island of Salsette, and about twenty miles from the town of Bombay, in a letter to the Medical Board, observes:—'In order to afford you every information in my power, I will just add, that to common observation there has been nothing very particular in the state of the weather. The barometer has neither been particularly high nor low. The thermometer, for the last month, has scarcely ranged more than from 75° to 82°, and many days nearly stationary at 78° or 79°. Leslie's hygrometer, according to the days, has ranged from 8° to 20°. The fall of rain in August was unusually great; measured by Howard's pluviometer, we had upwards of forty-eight inches.' Some idea may be formed of this enormous quantity of rain, when it is recollected, that even in the rainy climate of Great Britain, not more than thirty-two inches, on the average, fall *annually*. The Bombay Gazette of September 30, likewise mentions, that thunderstorms of unusual violence had occurred there of late. Accounts from Surat and Broach also lament the damage done there by the 'unusual fall of rain' in August."

"It appeared at Bellary about the middle of September. The weather during its prevalence was extremely unsettled, usually cloudy, squally, damp, and rainy, but occasionally clearing up suddenly, and as suddenly presenting again the former appearances.

"The disorder appeared for the first time in H. M. 34th

regiment (excepting one case) on the 21st of September, and committed dreadful ravages before night. It is therefore evidently of the highest importance to ascertain the state of the atmosphere on that memorable day. Mr. Allardyce, the surgeon of the regiment, reports to the Medical Board :—'During the whole of the day of the 21st, the weather was unusually close and excessively oppressive, with a clear sun. At 10, P.M., we had a violent thunderstorm, with two hours incessant and heavy rain. It rained again heavily the whole night of the 22d. The 23d was hot and close, but no rain fell at our camp on that day, though a considerable quantity fell all around us. It rained again on the morning of the 24th, and very heavily the whole of that night.' On the 25th the disease abated remarkably, and in three days more entirely disappeared. I am not particularly informed of the state of the weather after the 24th, but it is generally mentioned that 'it became fine when the disease disappeared.'"

Again—

"Mr. Mackenzie, surgeon to the Governor's Body Guard, observes, in a report to the Board, (13th of October) :—'It is a question (notwithstanding the protracted prevalence of the epidemic in various parts of India) as yet undetermined, what its predisposing causes are. Various opinions have been given, but all of them admit of unanswerable objections. That, however, some peculiar state of the atmosphere has influence, as an exciting cause, is generally admitted. In this part of the country one circumstance has struck all classes of people—the very great change in the state of the weather which has marked the present year. From June to October, thirty inches of rain are stated from good authority to have fallen, when during the same period in former years from three to five inches have been the average quantity. Added to this material change in the seasons, the atmos-

phere has, during the same time, been charged in a greater or less degree with electric fluid, and thunderstorms have succeeded each other almost in nightly succession. The thermometer has shown, during the year, a greater alteration in heat and cold than has been known for a long time.'

" On the 24th of October, when the epidemic was at its height at Madras, a hurricane, unprecedented in violence for many years back, occurred there, which did great damage to the shipping in the Bay, and was felt, within a few hours of the same time, in many other parts of the Peninsula. After this event the weather at Madras cleared up, and the epidemic abated. ' The weather since the storm has been uncommonly fine for the season—latterly resembling that after the monsoon. This is a most gratifying circumstance, both on account of the shipping, as well as its having afforded an opportunity for repairing much of the damage done on shore. Hopes were entertained that the change in the atmosphere produced by this visitation would have favourable effects with regard to the epidemic; these hopes appeared to have been realized, as we are happy to find, that in parts of Madras where there were numerous cases ten days ago, there are scarcely any; and that this favourable change has taken place in consequence of the alteration in the atmosphere produced by the storm, is no unfair conclusion.' "

After many other examples of a similar kind, Dr. Orton adds:—

" If to this mass of positive evidence be added the negative proof, that in all my experience, and in all the researches which I have made into this part of the subject, I have not met with a *single instance* in which the disease is found or stated to have appeared in the serene and settled weather which usually occupies so large a portion of the year in India, to such an extent as to be termed epidemical, surely

its connexion with the opposite state of the atmosphere cannot longer remain in the smallest degree doubtful."

We have said that the impression on the minds of almost all observers was, that there was something unusual in the weather. We do not know whether or not this impression has been corroborated by scientific observations. There is considerable ambiguity in the following passage, which we quote from Mr. Scot's recent Report, and as the tables he refers to are not published, we are at a loss to understand what his meaning is, and whether the conclusion he seems to arrive at be warranted by the facts or not; for it must be a most laborious and wearisome task to go through a series of meteorological tables extending over a period of six years, and derived, we presume, from many different parts of India. In quoting the passage, we shall omit the tables which give the per centage of natives and Europeans who were sick in different years, and satisfy ourselves with giving his general results.

"In order to afford the most ample information respecting the phenomena of the weather, and their effects on the health of the troops, a series of meteorological tables, and of tables of diseases, from the year 1815 to 1821, are given in the Appendix. A certain intemperature of the atmosphere may perhaps be inferred from the results of the tables of diseases; but its nature will not, it is apprehended, be very readily discoverable in the sensible changes of the weather.

"The general health of the European troops would appear to be restored, in 1822 and 1823, nearly to what it was in 1815 and 1816. The increase of sickness in 1817 is about 15 per centum; but in 1818 to 1821, the increase, independently of cholera, is very considerable, and is not to be explained by the movements of troops during these years.

The general health of the native troops appears to have been considerably meliorated in the last two years; while a remarkable increase of sickness, independently of cholera, has prevailed among them, coincident with that in the European troops. By a reference to the meteorological tables, it will be seen that the mean altitudes of the barometer and thermometer never differ, in a degree at all important, one year with another, from 1815 to 1821. According to the note at the end of the tables for the year 1820, the barometrical mean of the five years, from 1815 to 1820, corresponds exactly with the mean of the five preceding years; and that the thermometrical mean for the same period only differs by a degree and a quarter. The principal variations distinguishing the years 1817 and 1818 are to be found in the quantity of rain and the direction of the winds. How far we are to connect cholera with these phenomena must be judged of with careful reference to the mode of its progress through the Peninsula. In 1817, the disease did not appear; in 1818, it appeared in the most northern parts. In some places the weather was then wet, in others dry; in some, the usual periodical rains were prevailing. It progressed in all situations; and it had not extended to the southernmost points till 1819, when the irregularities of the preceding seasons might be concluded to have lost their effects. After the seasons have been restored to their wonted regularity, and, more lately, (1823-24,) after a completely opposite state to that of 1818 has prevailed—to wit, a season of unwonted drought, owing to the failure of the rains of the NE. monsoon, cholera has still unhappily continued to prevail; sporadically, in all parts, and in the instances of many marching corps epidemically, and with much severity and mortality. If the irregularity of the seasons in 1817 and 1818, therefore, have given rise to cholera, we apprehend

it can only be in an indirect, and, to us, an unknown manner; and its continuance, after having once originated epidemically, appears to be unconnected, in the main, with any sensible state of the weather."

We may make the same observation in regard to the electrical state of the atmosphere as to its other conditions; there is a general impression in the minds of most persons who have had much opportunity of observing the cholera, that a very considerable disturbance of atmospheric electricity, almost constantly, has been a frequent concurrent phenomenon. We have already referred to various writers who mention this as their opinion, in very different situations, as for example Petersburgh and Sunderland, and we shall quote one curious passage from Dr. Orton's work which we have already so largely laid under contribution. Before doing so we may observe that Dr. Orton tries to establish the position that the cholera is caused by a deficiency of electricity, and he has adduced many instances of all the various phenomena attendant upon such a condition, and shown, or tried to show, that the same phenomena are met with when cholera breaks out. His chapter is extremely interesting, and we only regret that want of space prevents our doing fuller justice to his ingenious investigations. We trust that if the cholera appear in this country, the most accurate meteorological observations may be kept in every place where it occurs. The following quotation is given rather with a view to interest our readers on the subject than to prove any particular point.

"Dr. Heyne, in his 'Tracts on India,' observes,—'These commotions of the earth are never very violent, and by no means frequent in this country, occurring about once in five years. I felt one at Toomkoor (in Mysore) on the 23d October 1800. It is remarkable that at the same time a violent

hurricane raged along the coast from Ongole to Masulipatam. The shock seemed to come from the north, along the inland range of hills. During the violent hurricane at Ongole, just mentioned, large masses of fire were seen to fall upon these hills, so well known for their influence on the needle, and rain fell at both places during the time in the greatest abundance. These hills are chiefly composed of a kind of magnetic iron-stone.' The coincidence between these observations and the following by the editor of the Madras Courier, is very remarkable:—'An earthquake, a phenomenon very unusual, we might, we believe, say almost unprecedented in this part of India, occurred on the 16th inst. (June 1819) in various parts of the Peninsula.' After describing its effects at Combaconum (in the southern part of the Peninsula), he says: 'So little known is such a visitation, that the moonsif quotes his Hindoo Shasters as foretelling that an earthquake would some time happen.* We may here mention, as connected in a manner with the earthquake, that on the same date a tremendous thunderstorm happened at Masulipatam. The lightning was terrific, and in the height of the storm the electric fluid struck a bungalow in which were three gentlemen. It is described as "appearing like *a ball of fire*, which burst with the report of a fourteen-inch shell." * * * The epidemic still carries off numbers at the Presidency and its vicinity. It is stated to be raging with great violence on the Hoogly among the shipping. No less than three chief officers of ships in the river died of the disease in one day.' Another such coincidence occurs in the Asiatic Journal for May 1817:—'Madras, Sept. 24, 1816. During the last week, the neighbourhood of Madras was visited by some severe storms, which, however, have not had the effect of clearing the sultry

* "The minarets of a mosque at Ahmedabad, which had stood four centuries, were completely thrown down by this earthquake."

atmosphere usually felt so oppressive at this season of the year. About four o'clock on Monday morning, a slight shock of an earthquake was felt at Madras. This phenomenon, so rare on this coast, was followed, on Tuesday night, by one of the most awful storms we ever witnessed.'

"The person who gives an account of a shock at Mymensing on the 15th of November, 1819, states that 'the weather for some time before had been cool and clear, but on the 12th it became cloudy and overcast, and the atmosphere heavy and warm.' That of Wallajabad on the 2d of October, is stated to have happened on a stormy night with heavy rain, and a flash of lightning was observed at the instant of its occurrence.

"The rainy season commences nearly all over India usually about June, and therefore the occurrence of the great earthquake of the 16th of that month (1819) corresponds to that period. The 'Oriental Star,' of the 19th of June, mentions that 'heavy gales of wind had lately prevailed at the head of the Bay of Bengal;' and that of July the 3d, informs us, that shortly before, a severe storm and inundation had been experienced about Chittagong and Dacca. About this time also the epidemic was raging at many places with great severity.

"Mr. Jameson, Secretary to the Medical Board of Bengal, has given a detailed account of the state of the weather at Calcutta, which appears to be connected with the earthquakes that happened there and in other parts of Bengal, on the 11th of November, and several subsequent days. 'Two or three cold, sharp days (in October), with clear sky, and northerly wind, were succeeded by nearly a month of such damp, disagreeable weather, *as to the experienced eye clearly foreboded the return of cholera.* The air was then hazy, raw, cold, and uncomfortable to the feel. The thermometer

ranged from 74° to 83°, but it felt much colder. There were no sudden variations of temperature. The appearance of the sky was peculiar: it was cloudy, but only partially so. The clouds were not dense, or heavy, or fleeting; but thin and fixed, with frequent breaks, through which the blue sky appeared. They were generally of a dark grey colour; flat, dull, and gloomy; and for several days formed a long, broad, fixed bank towards the west and north-west verge of the horizon, and remained wholly unchanged in shape or appearance. The wind varied from north-west to north-east. There was seldom regular sunshine. This state of things continued till the 12th, when there was a severe shock of an earthquake, followed by rain and variable winds for several successive days till the 20th, when a dry cold wind came round from the west, and brought with it a clear sky and regular weather. During the whole of this period of irregularity, numerous cases of the disease occurred, and proved very fatal in Kallinga and other native departments of the town; but no sooner had the season become regular, than the epidemic ceased to be heard of." *

The only other exciting cause which remains to be noticed is unwholesome food and drink, and we may add improper physic. When there has been a habitual use of those deleterious articles, then a state of the system may be produced which is liable to an attack of cholera; but the consideration of this belongs to the head of predisposing causes, and may be included in the general division of poverty and destitution, for the poor have no choice in their food; they are thankful to have food at all; and the only kind of it they can procure is often very injurious to them when the cholera prevails. Superstition is as mischievous in some countries as destitution is in others; for example in Petersburgh:—"The

* Orton, op. cit., pp. 264-267.

month of June, when the disease appeared, is the period of one of their long religious fasts of three weeks' duration. The people abstain all this time from the use of animal food of every kind, including milk, eggs, and butter. The diet consists chiefly, besides fish and rye-bread, of vegetables, such as cabbage, cucumbers, and other varieties of the pumpkin tribe, dried mushrooms, salads, &c., which are often eaten raw, and dressed with linseed oil and vinegar; their ordinary drink is an acid kind of beer, made of rye-meal and malt fermented, called *quass:* they are greatly addicted, also, to the use of ardent spirits. This diet, besides being very lowering for labouring people, is of a nature to create a tendency to bowel complaints. Although the Archbishop allowed the people to dispense with the fast, and the Emperor ordered meat for the soldiers, such was the strong attachment of the lower classes to their accustomed rites, that they generally continued the observance of the fast, and it was sometimes found difficult to persuade them to take even a little broth, although the saving of their lives seemed to depend on their being sustained by suitable nourishment."*

The following quotation from Mr. Scot's work brings into view how improper aliment and physic excite the disease:—

"Many instances are noticed where cholera has supervened on the use of neutral purgative salts. The effect of these medicines bears, indeed, a strong resemblance to some of the appearances in cholera. The clear, watery, debilitating stools; the chill, and, in feverish subjects, the ague fits which they cause, obviously point them out as unsafe, especially during the prevalence of this disease. Cases of cholera terminating in death have occurred after drinking unwholesome liquors. An instance of this happened in a party of six men, who, after drinking together, were all

* Crawford's Observations on Asiatic Cholera, p. 7.

seized with it, in consequence of which several of them died. Three men, having eaten, at the same time, the seeds of the coral plant, had all the symptoms of severe cholera."

So much for the predisposing and exciting causes of the disease. We have spoken only of the more prominent and unquestionable; to have attempted more would have required greater space than is consistent with the design of this treatise. We now pass to a consideration of

THE PROXIMATE CAUSE OF CHOLERA.

Suppose a labouring man returns home of a dull, drizzly evening after his day's hard work, and instead of finding his supper ready for him, finds his room in an uproar, and his wife ill of cholera: suppose that after giving his assistance all night till she dies, he lies down without eating anything, exhausted and distressed, upon some straw beside her bed, which is on the level with the floor, we should then have a combination of the predisposing and exciting causes of the disease: and suppose he suddenly manifested the characteristic symptoms of the disease, and we were asked to tell the nature and seat of the first change in his system which had so suddenly transformed a strong, healthy man into a shrivelled, convulsed, speechless patient, more like a corpse than a living being; the answer to such a question would be an account of the proximate cause of the disease. It is obvious that the discovery of this proximate cause, this internal change, is much more difficult than the determination of the external exciting causes or the predisposing ones; and while there is a general consent in regard to the latter, there is a great diversity of opinion about the former. It is not our intention to notice all the conjectural causes which have been assumed and proposed to account for the symptoms of cholera, we shall only advert to two opinions upon

the subject, which appear at present to have by far the largest number of adherents, and one of which seems to us by much the most plausible.

The first opinion is thus stated by the Sanitary Commission in their Report :—

"Asiatic cholera appears to be caused by a poison diffused in the atmosphere, which acts with peculiar intensity on the mucous membrane of the alimentary canal. The irritation set up in this membrane, in most cases, is not violent at first ; but if it be allowed to continue unchecked many hours, it produces such an extraordinary change in the membrane, that the thinner and colourless portion of the blood is poured out from it with the same rapidity as it would be if a large opening were made in the great vein of the arm."

Müller mentions that in Berlin, amid the innumerable theories promulgated in that prolific capital, the one most in vogue when he was there, in September 1848, (it is probably obsolete long ago,) may be thus stated :—Cholera "consisted in a very acute catarrh of the intestines, combined and essentially associated with certain peculiar symptoms, which were an extremely rapid transudation of all the fluid parts of the blood ; and in consequence of this, a rapidly developed paralysis of the nerves."* Broussais says, it is the action of an unknown agent upon the alimentary canal, which produces "exagération de l'action nervososanguine, et supersecrétion muqueuse."† Or in the language of Dr. Sutherland, that the cholera is a serious hæmorrhage from the bowels.

Our objections to this opinion in all its modifications are twofold ; the first is, that most unequivocal, and what we would call *typal* cases of cholera, run their course with little

* Op. cit., p. 46.

† Cours de Pathologie, par F. G. V. Broussais, T. V., p. 477.

or no discharge from the bowels at all, and that there is no appearance of any of those symptoms we are in the habit of seeing attendant upon bleeding to death. As an example, let us mention a case which came under our own observation. A healthy young man had been at his work till four o'clock in the afternoon, when he returned home and went to bed beside his father, (a poor old Frenchman, a follower of Charles X. into Edinburgh.) We arrived at the house at nine in the evening, and his father told us that his poor boy had been perfectly well till that day, that he had been over the bed ten minutes before, and was violently cramped. On turning to the lad himself, we found him stiff and dead. He had died convulsed in the bed with his father, without his father knowing it, and had been able to get up and stand ten minutes before his death. There is a multitude of similar cases on record, although we believe few so painful in every particular. Mr. Scot* says, the absence of purging appears to denote a peculiar degree of malignancy in the attack. In short, in the worst kind of cholera, that peculiar symptom of intestinal hæmorrhage does not occur, therefore flooding from the bowels cannot constitute the proximate cause of the disease.

Our other objection is, that cholera may be cured as rapidly as it makes its invasion, which is quite incompatible with its being dependent upon violent hæmorrhage. We need give no farther illustration of this after the case of Dr. Quin, to which we have already adverted.

We may then dismiss this cause as neither proved to exist, nor sufficient, if it did, to produce the phenomena for which it is called to account.

The other opinion of the proximate cause of cholera is, that it is a morbid affection of the ganglionic system of

* Op. cit., p. 48.

nerves, and more especially of the solar plexus. We cannot establish this theory by direct proof; all we can do is to show that some powerful morbid action taking place in this system of nerves might account for all the symptoms of the disease, and that, in the manner and rapidity of its effects upon the frame, it bears an analogy to those agents which seem to act also primarily upon the nervous system.

Without entering upon controversial topics, we may state that the generally received opinion of the function of the ganglionic or sympathetic system of nerves is to endow the various organs over which they are diffused—and that is all the organs of the body—with their peculiar vitality, and to associate them together, so that an impression made on one organ may be conveyed to another at a distance. It is no matter for our present object whether this be done by the ganglionic nerves "*per se*," or in virtue of their intimate union with another set of nerves. In short, the ganglionic system is the seat of life, and through this seat of life there run all the chords of motion, sensation, and sympathy. An influence operating upon it has a double action; it affects vitality directly, and it acts upon all the functions of the body, because all these functions are more or less controlled by the nervous system.

Suppose a noxious power to act upon the ganglionic system, what should we expect to be the consequences? If the action were intense, it might arrest all vitality, and life might cease suddenly with a general convulsion of the frame. It would be like the cold finger of death touching the balance-wheel of the machine, and instantly arresting all the wheels whose complicated movements constitute the life of our wonderful organism; or if the action were not sufficient for this, it would sensibly depress the vitality of the system as its primary consequence, and derange all its func-

tions as the secondary effects. This seems to be exactly what happens in cholera. When the poisonous agent is very potent and malignant, very speedy death takes place with few general symptoms. When the poison is weaker, then we have a great number, and a great variety of symptoms. We might say, that the only essential symptom of cholera was death ; that all the other symptoms were merely concomitant. The most important morbid impressions are propagated along the various nervous tracks which freely inosculate with the ganglionic system. The influence traverses the respiratory nerves which supply the heart and lungs, and the patient's first definite sensation of disease is connected with the heart. The exclamations, " Oh, my heart !" and " my heart is bursting !" and " something is wrong with my heart !" we have heard repeatedly from persons ill of cholera. This influence produces a sense of extreme depression at the heart, or an intolerable load there. It destroys the function of the lungs ; the breath comes from the chest as cold as it enters ; respiration goes on, but no effects are evident, and it is like the mechanical breathing of a corpse. The consequence of this is that the blood does not undergo the requisite changes. It is no longer purified and arterialized in the lungs, but continues dark and venous, and thus gives the livid colour so characteristic of the disease. Having acquired no heat in its transit through the lungs, it can give none to the rest of the body, which remains deadly cold. All secretion requires a certain nervous influence, and this being at an end, or perverted, the different organs cease to perform their functions. The matters which should be eliminated from the blood remain in it, so that not only is there no purification at the lungs, but all the other impurities of the body accumulate in this "*pabulum vitæ*." Instead of secretion we have discharges. The withdrawal of the

proper nervous influence from the mucous membrane of the bowels, and the state of the blood produce such a condition of that substance, that the thinner part of that fluid escapes in violent gushes both from the intestines and from the stomach. So much for the effects of this morbid influence upon some of the organs supplied by the ganglionic and respiratory nerves. Not less striking are the results of its propagation along the motory nerves. Through them it produces the most violent cramps in the various voluntary muscles, so that an attack of cholera has been mistaken for tetanus, and has been compared to hydrophobia and other convulsive diseases. It has also a marked effect upon the organs of the senses. The eyes are dull, there is singing in the ears, the voice is strangely altered, becoming a hollow whisper. The intellect alone is unaffected. It is obvious, that after such a morbid impression has ceased to act, the system must take a long time to recover from the disorganization of its elements. Instant cure may be possible at the very first before the secondary effects of the morbid action in the ganglionic system have commenced; after that it is impossible. The poisonous blood cannot be removed, and pure blood put into the veins; this must be a slow process, and so long as this goes on, great danger must attend the case. Cholera, unless instantly arrested, must therefore always be a most dangerous disease under any system of treatment.

We may now assume that the hypothesis of a primary morbid action in the ganglionic system would satisfactorily account for most of the symptoms of cholera, and we shall next consider the evidence in favour of such a condition being actually present. Any direct evidence derived from the morbid anatomy of the disease comes properly into the next division of the subject, where it will find its place; and in the meantime we shall direct our inquiries to ascertain

whether other morbific influences, which act primarily through the nervous system, afford any analogy in the effects they manifest with those which characterize cholera.

As there is a strong tendency at present to revive in a new form the old humoral pathology, and to deny altogether the direct action both of morbific and remedial agents upon the nervous system, we must adduce some proofs of the counter-proposition.

In the first place, we shall show that sudden impressions upon the ganglionic nerves may cause death without anything actually passing into the blood. Lobstein, in his treatise on the sympathetic nerves, makes the following observations :—

" There are many instances in which injuries inflicted externally upon the epigastrium have produced death by their mechanical effects. 1*st.* The dropping of water from any height upon the scrobiculus cordis cannot be long borne. 2*d.* A boy was killed from being struck by a playmate on the epigastrium with a snow-ball, which left no visible marks on the organs within. 3*d.* Ruisch, who during fifty years taught anatomy at Amsterdam, states that sudden death may occur from a concussion of the mesenteric nerves (solar plexus) without the existence of any lesion in them which can be detected. 4*th.* An electrical discharge through the abdomen may cause instantaneous death. This is confirmed by Humboldt, who saw himself the electrical eels, (Gymnotus Electricus,) when placed under the bellies of horses and mules, destroy the lives of these animals, by the sudden emission of their electric fluid. 5*th.* In the recession of the miliary exanthemata, by which patients are suddenly destroyed with a development of the severest symptoms, inexpressible anxiety, suffocative asthma, &c., whilst the function of the brain is unimpaired, there is proof that an im-

pression is thrown upon the solar plexus and the par vagum, which are closely connected together, and produces the partial death of those nerves, called with much justice *abdominal paralysis or apoplexy.*"*

Examples of a similar kind will be found in Sir C. Bell's work upon the nerves.

Many poisons operate so swiftly as to make it almost certain that they act through the nerves. Magendie, speaking of the effects of pure hydrocyanic, compares it in point of swiftness to a thunderbolt. Dr. Christison was unable to detect an appreciable interval between the moment when conia, the active principle of hemlock, was inserted into the leg of a dog, and that in which the animal died.† The poison of some kinds of serpents is also very rapid. Russell, in his treatise upon Indian serpents, mentions the case of a servant girl who was bit by a species of boa, and died in ten minutes after the wound was inflicted.‡ The resemblance between the effects produced by bites of poisonous snakes and cholera is so striking, that Mr. Coates, in his Report to the Medical Board of Bombay, says, "I should have pronounced that some of my patients (with cholera) had been labouring under snake-bites, had I not been better informed."§

The remarkable general resemblance between cholera and the plague must strike every one who attentively considers the phenomena of both. The following are the heads given in Russell's History of the Plague of the various symptoms: Fever, delirium, coma, impediment or loss of speech, deafness, muddiness of the eyes, white tongue, state of the pulse,

* Lobstein on the Sympathetic Nerve, pp. 122, 123.
† Christison on Poisons, p. 8.
‡ See Orfila on Poisons, vol. ii. p. 402.
§ Reports on the Epidemic, p. 153, quoted by Orton.

respiration, anxiety, pain at the heart, inquietude, debility, faintness, convulsion, appearances of the urine, perspiration, vomiting, looseness, and hæmorrhage. The symptoms registered under many of these kinds are common to plague and cholera, and the points of likeness are more important than those in which they differ. We have mentioned the almost constant complaint that cholera patients make—of anxiety, and of something being wrong at the heart. So striking a symptom of cholera is this, that Dr. Markus, who saw a great deal of the disease in Moscow, considers the heart as the primary seat of the disease, and gives a curious comparative table of "the symptoms of cholera and those of the morbid affections of the heart."* In the plague, says Russell,† "the sick showed how severely they suffered, by perpetually changing posture in hopes of relief; but when asked where the pain lay, they either answered hastily they could not tell, or, with a fixed, wild look, exclaimed, *Kulbi! Kulbi!* (My heart! My heart!)"

Is it not probable that the plague is produced by a poison acting, as well as the cholera poison, upon the ganglionic system of nerves, being conveyed to the seat of these nerves through the medium of the respiratory apparatus, and producing symptoms so far resembling cholera as the primary seat of the disease is similar, and so far differing as the exciting cause of the two is different?

To conclude, all we can say is, that of the many hypothetical causes suggested as the proximate cause of cholera, a morbid action in the ganglionic system of nerves seems to us by much the most probable and satisfactory.

* Op. cit., p. 80. † Op. cit., p. 88.

MORBID ANATOMY.

The morbid anatomy of cholera has been investigated by many able pathologists, and on the whole there is a great concurrence in the description of the appearances found on dissection. We may begin with the observations upon the cholera in India. Mr. Scot says:*—"The external appearance of European subjects who have sunk under cholera, closely resembles that which has been noticed as taking place during life. The surface is livid, the solids are shrunk, the skin of the hands and feet is corrugated. There seems no sufficient evidence of any uncommon tendency in the body to putrefaction after death, nor of any characteristic fœtor from the abdominal cavity. No particular morbid appearances have been found in any of the cavities of the body, which are lined with *serous membranes*, or in these membranes themselves. The cavities of the pleura, of the pericardium, and of the peritoneum, have almost uniformly been found in a natural state, or the deviations from that state have manifestly had no connexion with cholera. The surfaces which are lined or covered with *mucous membranes*, have, on the contrary, very generally exhibited signs of disease. These will be noticed, as the organs connected with them come to be mentioned.

"The lungs have not unfrequently been found in a natural state, even in cases where much oppression of respiration had existed previously to death. Much more generally, however, they have been found either to be gorged with dark blood, so that they have lost their characteristic appearance, and have assumed more that of liver or spleen; or they have been found to be in the opposite state—that is, collapsed into an extremely small bulk, and lying in the

* Op. cit., p. 69.

hollow on each side of the spine, leaving the cavity of the thorax nearly empty. This appearance has been so remarkable as to induce Dr. Pollock, of H. M. 53d regiment, to conceive, that it could only be produced by the extrication of a gas within the cavity of the pleura, capable of overcoming the atmospheric pressure. It is understood, however, that opportunities were had of piercing the thorax of the dead body under water, and that no gas was extricated. As there appears to have been an absolute vacancy in the cavity of the pleura, (that is to say, the lungs did not by any means fill it,) it would seem that that viscus had exerted a contractile power, adequate to overcome the pressure of the atmosphere. The blood found in the lungs has been always very black. The heart and its larger vessels have been found to be distended with blood, but not so generally as the apparent feebleness of their propelling power, and the evident retreat of the blood to the centre, would have led us to expect. The right auricle and ventricle being gorged with blood, is nothing peculiar to cholera; but some dissections have shown the left cavities to be even filled with *dark* or *black* blood, which we may reckon as a morbid appearance more peculiar to it. In the abdominal cavity, the peritonial coverings of the viscera, being *serous membranes*, present in general but little deviation from the healthy state; occasionally, indeed, the morbid accumulation of blood in the vessels of the viscera, imparting an appearance of turgidity and blueness, is evident on their exterior surfaces. We also find them bearing marks of inflammation, especially where the patient may have lingered long before death. In other cases, the whole tube has had a blanched appearance, both externally and internally. The stomach and intestines generally preserve their ordinary volume. The appearance of the omentum is not sensibly affected in cholera.

The stomach is found to be so variously affected as to destroy all grounds for pathological reasoning. It is very rarely found empty or much contracted after death, nor has any appearance of spastic stricture of the pylorus been often detected. It has, however, sometimes occurred. Its contents appear to be chiefly the ingesta in an unaltered state: in some cases, greenish, or yellow, or turbid matters are found. The stomach has been said to have been found 'lined with calomel.' Various appearances, either of active inflammation or a congested state of the vessels, have been noticed, sometimes in one part, sometimes in another. The parts seem as if they were sphacelated, thickened, softened, and friable; and, in short, exhibit so great a variety of appearances, from a perfectly natural state to the most morbid, that no particular light is thrown by them on the disease.

"The intestinal tube is sometimes collapsed, but oftener found to be more or less filled with air, distended in some parts into bags or pouches, containing whitish, turbid, dark, or green-coloured fluid, and in others presenting the appearance of spastic constriction. The latter, however, is not common. No fæcal or other solid matters are found in the intestines, but very commonly large quantities of the congee-looking fluid, or of turbid, serous matter. The duodenum, and occasionally the jejunum, have been found loaded with an adherent, whitish or greenish mucus; at other times they have been found seemingly denuded of their natural mucus, and often perfectly healthy. Traces of bile in the intestines, or of any substance apparently descended from the stomach, are exceedingly rare. Sanguineous congestion, and even active inflammation, are stated to be more common in the bowels than in the stomach; but, on the other hand, instances are very numerous where no such indications have been detected. The thoracic duct is stated to have been

empty of chyle. The liver has been commonly found to be gorged with blood, but not always: it is an organ usually very vascular; and it would probably demand a nicer discrimination than has been bestowed on the subject, to distinguish the degree of congestion in which it is naturally left by the settling of the blood after death in ordinary diseases, from that which has been observed after an attack of cholera. The gall bladder has almost universally been found to contain bile, and, in the great majority of cases, even to be completely filled with it. As is usual with this secretion in cases of retention, it is of a dark colour. Very different states of the gall ducts have been described—cases of constriction and impermeability seeming to be equally numerous with those of an opposite character.

"The urinary bladder is found, we may say universally, without urine, and very much contracted. The lining or mucous membranes of the bladder and ureters have been found coated with a whitish mucous fluid. The appearance of the spleen, which is so various under the ordinary conditions of the body after death, has indicated nothing that can be mentioned as belonging to cholera. The vessels of the mesentery have been very generally found to be uncommonly full of blood. In the head, appearances of congestion, and even of extravasation, have been frequently observed, but not so uniformly, nor to such extent as to require any particular notice. Only one case has been given, where the state of the spinal marrow was examined, and in that, indications of great inflammation were detected in its sheath; the case, however, was in some degree a mixed one."

The next quotation is from a paper by M. Victor Bally, which appeared in the Memoirs of the Royal Academy of Medicine, and has been partially quoted in the fourth number of the British and Foreign Medico-Chirurgical Review, from

which we have made the following extracts. M. Bally had extensive opportunities of investigating the subject at the Hôtel Dieu of Paris.

He divides the disease into the cyanic and reactionary period, and the following description is of those who died in the former stage :—

" *The surface of the body.*—The *cyanosis*, which may occur at very different periods prior to death, is not the result of engorgement, but of a deprivation of the watery parts of the blood. It is very variable in extent and intensity, and difficult of exact pictorial delineation. It is rare to find it quite uniform and general. In the algide form of cholera, it is by no means rare to find portions of the body having after death a higher *temperature* than they possessed during life. The *cadaveric odour* was long in becoming developed ; a strong smell from some of the remaining alvine discharges, resembling the odour of the pollen of the chesnut-flower, was, however, observable. This smell was often strong and remarkable ; and although it was also very perceptible on opening the intestines, it in nowise resembled that of fæcal matters. The fæces, too, were long retained without undergoing putrefaction. Otto of Breslau exposed the bodies of an old man and young woman dying of cholera for three days to the rays of the sun, and yet was the *rigidity* as great as at first, no putrefaction having occurred. The *emaciation* was as remarkable during the short space of time that elapses in cholera, as it is in the longer one of phthisis ; and the bodies of the patients were lifted by the dissecting-room attendants with astonishing facility. The very singular condition of the skin was sometimes observed, termed by the author *empâtement*. In well-marked cyanosis, it might be seen towards the decline of life ; but then the skin, if pinched up, would slowly, by its elasticity, resume its form. After

death, however, it remained as placed, just as would so much moulded clay. The skin of the fingers was thus thrown into plaits without the mechanical intervention of any foreign body. The author explains the occurrence by the removal of the aqueous portions of the blood from the cutaneous capillaries, leaving only a pasty plastering on their surface; and he believes this passive condition of the skin to act as a preservative against the communication of the disease by contact—differing so entirely as it does from the turgescence of the surface observable in yellow fever. The skin of the forehead, which was violaceous, pasty, and plaited prior to death, had frequently recovered its natural colour when the body was brought in for dissection. In this disease, says A. Beclard, the living resemble the dead, and the dead the living. In respect to the *eyes*, M. Bally observes:—

"'Who does not recollect the frightful aspect of the unfortunate beings suffering under the algide period? How astonished and stupified their air, what uncertainty in their looks! Was ever a more painful spectacle seen than the globes of the eye coloured by numberless delicate arborizations, often giving rise to bloody patches; or those horrible stigmata blackening the sclerotica exposed to view by the convulsive expansion of the eyelids? The sclerotica, too, acquired a demi-transparency due to its partial desiccation, which allowed the blackness of the choroid to be seen through it. During the apogee of this period, a rapid disappearance of the fat of the orbit, and a notable resorption of the aqueous humour of the two chambers and of the interior of the tissues took place. At the same time, the muscles, finding no longer the same resistance in a globe so diminished in volume, drew back the organ into the very depths of the orbit. It might be said, and the remark would apply

to the entire organism, that the whole of the powers and actions of the economy exerted no longer any other effect than that of emaciating the body.' (Tom. xii. p. 166.)

"The *conjunctiva* is sometimes entirely reddened, just as is observed in yellow fever, only in this last disease the black spots are not seen. The *iris* becomes dull, and loses all harmony in its movements, being drawn in a great variety of directions, and enlarged either transversely or vertically, instead of circularly, 'whence results the fact that this organ, as in the feline race, acts irregularly and unequally; and indeed some portion of its fibres may be considered as attacked with partial paralysis, or perhaps with fibrillary convulsion, as is observed in the muscles.' The altered condition of the circulation of the eye, the irregularity of its movements, and the change in its bulk, explain the peculiar look, the loss of sight, and the hallucinations, of cholera patients."

"*Alimentary canal.*—The *mouth* is dry, and in no other disease do the lips remain so separated after death, owing to the rigidity consequent on prior convulsive action. The *teeth* lose their whiteness and brilliancy, acquiring a bluish or reddish cast. . . . . The *tongue*, so extremely cold during life, is less so after death, and is smaller in size than natural. The fungiform papillæ at the base are much developed. The *salivary glands*, though unaffected by morbid processes, yet cease to perform their natural functions—this being one of the causes of the intense thirst suffered by the patient. The follicles of the *œsophagus* are sometimes developed, especially towards the cardiac orifice. The appearances observed in the *stomach* are described very minutely. Some portions of the organ were observed of a dull white, just as in *ramollissement*, the texture, however, remaining firm. In other cases, spots of

ramollissement did exist. The abnormal development of the capillary vessels filled with blackened blood, has given rise to the erroneous belief of the existence of gangrene. Gastritis, too, except to a very limited extent in exceptional cases, is not found during the cyanic period. Three groups of lesions, independently of altered colour, were observed :— 1. Granules with no contents. 2. Pyriform granulations, containing a white, albuminous, purulent-looking substance, this being sometimes fluid, and oftener so thick as not to pass out even after the incision of the granule. 3. The mucous membrane was penetrated, and especially at the great *cul de sac* of the stomach, by numbers of minute holes or depressions visible to the naked eye. When death took place in the algide period, the external appearance of the *intestinal canal* was most remarkable, so deeply coloured was it by the network of vessels—ecchymosis sometimes resulting from the great afflux of blood.

" ' Not that the capillaries remained filled. They were so when an unusual, extraordinary, and prodigious afflux converged towards this point ; and they remained coloured and varnished, by the red portion of the blood separated from the colourless portion. They constituted a new order of organs, usurping functions which were not their own, and invading, in the full force of the expression, those of other organs. The intestine thus became transformed into a reparatory and secreting agent, which exhaled and allowed the transudation of white blood ; and if globules became mixed with this *intestinal sweat*, then the albuminous lymph was rose-coloured, the villi ceased to absorb, and the functions of the other secreting organs of the body were no longer performed.' (Tom. xii. p. 199.)

" *Automatic movements.*—At the instant of the extinction of life a rapid movement of the lips was observed (*marmo-*

tage), exactly resembling that which takes place in some persons while reciting their prayers. It continued a short time after death, and at the same time movements of the forearm were observed. These first produced pronation, which was slowly but with complete regularity followed by supination—such alternation continuing even for several minutes. If great care in observation had not been used, it might easily have been believed that these meteoric motions of the lips and arms were directed by consciousness. Frequently, a vermicular or oscillatory movement of the muscles of the thorax was discernible.

"*The Nervous System.*—In several cases the sinuses of the brain were found remarkably empty; and the veins of the pia mater were swollen up, though containing but little blood. The membranes of the brain were not found in the congested state described by some Indian practitioners; both the arachnoid and pia mater retained their transparency, the former containing no fluid, and manifesting some of the stickiness perceived in the pleura. The ventricles, too, contained less fluid than in the normal state, and the substance of the brain did not exhibit bloody points on section. The spinal marrow was examined in almost all cases, and found in a natural condition, its veins, however, being swollen and pursed up, without any turgescence from blood, and containing (the author supposes) rarefied air. The various nerves and ganglia were examined, without furnishing any particular results."

Professor Lizars of Edinburgh, in a pamphlet republished last year, containing his observations upon the anatomical appearances of persons who died of cholera, gives the following summary of the examination of the ganglionic system of nerves in seventeen cases:—

"In ten, the neurolema of the pneumogastric nerves was

injected with blood-vessels; in one, the nerve was enlarged; in another, it was thickened; and in a third, the neurolema was inflamed with ecchymosed patches.

"In six, the neurolema of the splanchnic nerves was vascular; in two, the ganglia at their origins were vividly injected; and one ganglion was ecchymosed.

"In sixteen, one or both of the semilunar ganglia were vascular; in one, it was inflamed; in three, it was enlarged and infiltrated with blood or serum; and in two softened.

"In eight, the solar plexus was highly vascular throughout; in three, the ganglia and nerves were enlarged, and one infiltrated.

"In four, the renal plexus was very vascular.

"In four, the œsophageal plexuses were vascular.

"In one, the recurrent of the pneumogastric nerve was vascular.

"In five, the cardiac plexus was enlarged and very vascular."*

Mr. Lizars is a most competent authority in anatomical matters, although his observations require confirmation. We shall conclude this department of our subject by a translation of Dr. Müller's summary of the pathological appearances observed in the recent epidemic, and which are derived from upwards of six hundred dissections of cholera subjects:—

Petersburgh, August 1848.

Membranes of the Brain.—Usually congested, but more frequently œdematous: the vessels of the dura mater filled with coagula of black unctuous blood; the dura mater at the base of the skull almost completely black-blue, (from the stagnation of the blood in all the vessels.) On removing the brain, there generally gushed out a great quantity of

* Page 46.

clear, or sometimes red-coloured serum, which also poured from the spinal canal.

Brain.—Constant and unusually developed hyperæmia; all the vessels are distended with the contained blood. The injection appears to have supervened when a previously existing congestion was at its height, and was particularly well seen on the under surface of the corpus callosum. Together with this, œdema of the brain, (Gehirn-œdem.) On separating the membranes, which is always easily accomplished, a quantity of serum flows out; the ventricles of the brain are more or less filled with serum, and even dilated in cases of prolonged duration of the disease. The substance of the brain is, in general, tenacious and firm, and of a peculiar and remarkable white colour, (most excellent specimens for anatomical study.) This state existed equally in all the cases examined, whether death had occurred after a few hours or several days. In the commencement of the epidemic, there occurred cases in which the brain was flabby and soft, but only in such patients as sunk in a few hours, or, for the most part, in a very short time. In a few instances, and particularly towards the end of the epidemic, meningitis made its appearance, with extensive purulent exudations.

Hyperæmia of the *spinal marrow*, which was at the same time firm and tenacious; a quantity of serum in the arachnoid sheath; in the spinal canal distention of the veins with blood. There occur frequently in the arachnoid small particles of cartilage of this form ⊛; at Moscow, this appearance, which indeed may often be observed, was declared to be characteristic of cholera.

Throat.—Swelling of the mucous glands at the base of the tongue, (which are hard and bluish-red); mucous membrane of the œsophagus and larynx dark-red, from the inactivity of the venous system, nothing besides.

Thoracic cavity.—In the majority of cases always at the commencement of the epidemic, and in all patients who sank rapidly, a peculiar unctuous feeling (like white of egg or isinglass) in the pleural sack, and in a less degree in the pericardium.

Heart.—Full of fluid blood, or else black unctuous clots (generally); also in many cases tough fibrinous coagula; very often larger or smaller spots of ecchymosis on the pericardium; besides which there was nothing remarkable, except a great flabbiness of the muscular substance.

Lungs.—Remarkable anæmia of the capillary system in the substance of the lungs, while black thick blood poured in greater or less quantity out of the larger vessels. The lungs are pale and whitish, and very dry to the touch. When patients die after reaction has set in, those dark spots may be already observed, scattered through the anæmic lung, though in a very slight degree, which are observed in the beginning of hypostatic pneumonia or acute œdema. When death occurs later there is very often more extensively diffused œdema of the lungs, or completely developed hypostatic, and for the most part lobular pneumonia, with soft red hepatization.

Abdominal cavity.—Capillary system of the liver anæmic; in the larger vessels at times a quantity of blood, at others very little. The liver presents but little to be remarked. The gall-bladder in general filled to distention with blackish, tough, and unctuous bile. In cases that had advanced slowly, and in which the contents of the intestine showed the admixture of bile, the gall-bladder was flaccid, or even entirely empty.

The *Spleen* small, and its capsule wrinkled; besides which, it presented nothing abnormal, excepting where it had become degenerated from previous attacks of intermittent

fever, a common consequence of this disease. In complication of cholera with typhus, the spleen was slightly enlarged, as in pure typhus, (very distinctly marked.)

Stomach.—The mucous membrane friable and soft, and exhibiting very often spots of ecchymosis. In a third of all the cases, undigested food was found in the stomach.

Small intestine.—At the commencement of the epidemic, very anæmic; yet, judging by the condition of the swollen vasa subserosa, which in some instances appeared as white, bloodless cords, and in others distended with blood, a state of hyperæmia might be detected, as having immediately preceded. At a subsequent period, throughout the entire small intestine, and particularly in the jejunum, a remarkable hyperæmia was perceptible, and in protracted cases even pure blood was thrown out (resembling bloody mucus.) An enlargement of all the solitary glands, and the glands of Peyer, or rather an engorgement of the adjacent villous coat, and of the entire circumference of the intestine, took place to an extent that is not observed in any other disease. Over the groups of Peyer's glands this engorgement presented the deceptive appearance of an exudation: the microscope, however, showed the villi, and microscopic injection of the vessels confirmed this. On drying such a piece of intestine, there merely remained at the destroyed spot a whitish point, as the contents of a solitary gland. Throughout the small intestine the epithelium was abraded, yet it covered in part, like a tough coating, the subjacent mucous membrane. With these changes there was always present the peculiar, pasty, greyish-white, flocculent cholera secretion of the intestine, (having an acid reaction, and containing a quantity of albumen.) Entire flakes hung down from the mucous membrane of the intestine, and presented the appearance of a slough, which, if squeezed out, proved under the microscope to be

epithelium. In other cases, but always associated with separation of the epithelium, appeared regular ileitis, the contents of the intestine being bloody; when the progress was slower, the first stage of the typhoid process was frequently observable in the neighbourhood of Peyer's glands, and in the entire lower part of the ilium, with the peculiar punctiform arrangement of the typhous formation, without arriving at actual ulceration. But in other cases there was ulceration and detachment of the mucous membrane in large spots, then discoloration and destruction of the mucous membrane and ecchymosed spots of greater or less extent. In cases where there was hypostatic pneumonia, the villi had disappeared at distant intervals, and the intestine appeared quite smooth in some places, while in others it might be perceived to be rough.

Large intestine.—At the commencement anæmia, the mucous and muscular tissues unusually folded, (whereby the volume is diminished,) and covered with a sloughy grey paste, which consisted of mucus and abraded epithelium. When the progress is slow, there is considerable hyperæmia, with a variable number of spots of ecchymosis occupying either part, or the whole of the intestine. The intestine in that part looked smooth and red, as if blood had been smeared on the surface of the mucous membrane. The patches of abraded epithelium, which are here of greater extent than in the small intestine, cannot be removed by the pouring on of water, and usually disclose, on being peeled off, an ecchymosed state of the mucous membrane. In several rare cases, there was observed, particularly in the sigmoid flexure and rectum, isolated patches of grey exudation, which in some places exhibited black spots, or large expanded scablike patches; on being examined with the microscope, however, although much altered in character,

blood corpuscules were perceived. When this was removed with the knife, ecchymosed spots were again found.

Next occurred the various grades of diarrhœic and dysenteric ulceration.

Mesenteric Glands.—In all those acute cases where true cholera discharge existed in the intestinal canal, and the peculiar solitary villous development and abrasion of the epithelium, the mesenteric glands presented an enlargement both characteristic and peculiar. They were swollen and infiltrated as in typhus, but of a pale yellow colour, like what is called herring-milt.

The urinary and sexual system exhibited nothing particular.

The *Peritoneum* had a distinctly greasy feel like the pleural sack, so that the fingers were actually stuck together by it.

Cases that had run their course rapidly always exhibited a very dark-coloured, wrinkled, and withered state of the skin, and were distinguished by a high degree of muscular rigidity.

It was observed that in the vast number of bodies examined not a single case of acute tubercular disease, which is generally so common in Petersburgh, was met with. This very important and interesting observation coincides with the statement of Professor Roketansky of Vienna, who noticed a similar immunity from cholera on the part of patients in acute phthisis.

CHAPTER IV.

ITS SYMPTOMS.

The most elaborate and accurate detail of the symptoms of cholera must fail altogether to give a just idea of the appearance presented by the disease ; for even supposing that the terms used by the describer were so appropriate as to convey to the mind of another the exact notion which was in his own, yet there would still be this immense difference between them, that the reader would only acquire gradually the impression of the various phenomena which the beholder receives instantaneously. Although this remark applies more or less to all descriptions of disease as contradistinguished from their actual observation, yet it is peculiarly applicable to the one we have now to do with, for in it there is a combination of an unusual number of symptoms. It is unlike all diseases we have ever beheld in this respect—that it fills the mind with a sense of horror. Many other maladies are far more painful, more deadly, some as rapid, many more loathsome ; but none are so full of horror. And this sensation is quite irrespective of our knowledge of the probable termination of the attack. The reason of this seems to us to be this :—Disease in all its other forms attacks the person ; we can distinguish the two, so to speak—we see the combat going on ; but the cholera seems to annihilate personality. What was a few hours before a warm, living, human vesture of the soul, by means of which it linked itself to other living

beings, is suddenly changed into cold, damp, dead flesh. The bond of union is converted into an impassable barrier. There is no more sympathy between it and a living man than if it were in reality a corpse ; and yet the mind is clear, confined though it be in this cold prison. In one word, we feel as if we were holding intercourse with a haunted corpse. To those who never saw a case of cholera, this may seem an absurd exaggeration ; but we do not think that any one who has come in contact with the disease in its most appalling form will accuse us of overstating the feeling of horror which came over him when he saw the cholera for the first time. However inadequate any description may be to convey a full idea of the disease, yet it is essential that we should have as accurate a register as possible of the various symptoms, that we may be able to discover the most suitable remedies.

There are four stages of the disease which it is important to distinguish. First, the *invasion ;* second, the *collapse ;* third, the *reaction ;* fourth, the *consecutive fever.* It may be a question whether the last should be spoken of as a stage of cholera, and not rather as a consequence of the disease, which judicious treatment may in a great measure prevent. However, for practical purposes, it is no matter whether we regard it as the last stage of cholera, or as the first stage of a new disease which cholera alone gives rise to.

In detailing the symptoms of the various stages, we shall follow the method we are in the habit of employing in making a register of a case, as it has many conveniences, and is besides familiar to all homœopathic practitioners.

The general symptoms of the invasion of cholera are rapid prostration of strength ; inability to sit or stand ; languor ; vertigo on rising ; restlessness ; general uneasiness ; pains throughout the whole body ; soreness of the body.

The skin is colder than usual, and moist, or dry and cold.

Fever.—Chilliness, shivering, trembling, and chattering of the teeth. Pulse rapid, soft, and full, intermittent.

Moral symptoms.—Great anxiety and depression of spirits.

Head.—Pain in the head ; vertigo.

Eyes.—Dark circle round the eyes ; eyes dull.

Ears.—Noise in the ears.

Face.—Pale and anxious ; sometimes cold ; expression uneasy and peculiar.

So remarkable is this change of expression, that in India servants can scarcely be recognised by their masters, even in the early stage of the disease. Mr. Annesly, who is a great authority on the subject, says :—" A practitioner, possessed of true professional tact, will discover in the countenance of the patient the earliest changes which mark the approaching invasion of the disease."*

Mouth.—Tongue white, loaded, covered with a yellow fur.

Appetite.—Great thirst ; nausea.

Stomach.—Nausea and vomiting ; pain at epigastrium.

Abdomen.—Pain in abdomen ; soreness ; tenderness on pressure ; pain below umbilicus ; griping of the bowels.

Fœces.—Heat in ano ; suppression of stools ; constant ineffectual desire to pass stools ; loose stools of a natural colour, or dark brown, or greyish.

Urine.—Ineffectual desire to urinate ; urine pale.

Chest.—Oppression of chest.

These are the chief symptoms met with in the first stage, or the invasion of cholera ; but of course they are not all present in every case, some are much more constant than others. We should feel inclined to consider the following group to be pathognomonic : Sudden sense of illness, giddiness, nausea, perhaps vomiting, a great change in the ex-

* Reports on the Epidemic Cholera, published by the Medical Board of Bombay—Preface.

pression of the countenance, a rapid intermittent pulse, especially if the patient has been particularly exposed to the choleraic influence, and if there is no other explanation of the symptoms. For we may here observe, that during the prevalence of cholera, hysterical females often are affected by a train of symptoms very like the disease, but in reality only an imitation of it, and not attended with danger. It requires great tact to distinguish this unconscious feigning from an attack of real cholera.

The first stage is probably never fatal in this country, but in India we are disposed to believe that it may be so. Instances are on record of the natives being suddenly attacked with giddiness when walking in the open air, and after having retched a little, they expired in a few minutes. A native tailor at Bellary is said to have expired instantly with his work in his hand, and in the very attitude in which he sat when attacked by what was believed to be cholera. At Punderpoor three hundred and fifty people are described to have died in one day, tumbling over each other lifeless on the public streets. In a few days, says another writer, the deaths were estimated at three thousand, and the patients are described as having been knocked down dead as if by lightning.

The first stage, when not fatal and not checked by its appropriate specific—and we cannot too soon or too often state our firm conviction, that this stage is in the vast majority of cases curable by a specific medicine, and that upon the timely administration of this medicine hangs the fate of thousands during the prevalence of the epidemic—if neither fatal nor unchecked, it soon passes into the *second stage, or stage of collapse.* The symptoms of this stage are numerous and well marked, although it presents a great variety of forms, so that we scarcely remember two cases precisely alike. We shall employ the same classification as before.

General Symptoms.—Rapid prostration of strength ; stiffness of the muscles ; the body suddenly becomes stiff, blue, and cold ; violent cramps of the muscles of voluntary motion ; cramps so painful as to make the patient roar out, sometimes force him out of bed ; violent convulsive fits, lasting from five to ten minutes, with fixed eyeballs, clenching of the jaws and slight foaming at the mouth ; violent starting fits, as if from fright ; several fainting fits in rapid succession.

The spasms are sometimes so violent and general that the patient looks as if ill of tetanus. We were told by a physician of high authority in all matters regarding cholera, that he was once taken to see a lady who was said to have tetanus. He found her in the state of opisthotonus or emprosthotonus, we forget which, but one of the two, her body forming a complete arch, and the medical attendants sorely surprised. From the expression of the countenance he diagnosed cholera, and bled her. The spasms immediately subsided, and vomiting and purging, with the other unmistakable symptoms of the disease, set in. She recovered notwithstanding the bleeding. To continue our catalogue :—

Skin.—Cold and livid ; covered with clammy perspiration ; dark-blue ; shrivelled ; feels like soaked leather.

"The sensation imparted by touching the skin of a person ill with cholera is very peculiar, and reminds one of that imparted by a dead body. The skin when much collapsed, becomes insensible even to the action of chemical agents, and hence the usual vesicatories fail in producing any effect. The application of mineral acids and of boiling water, in this condition of the skin, produces little or no effect, and some patients are said not to have been sensible of the operation. The action of mineral acids on the skin is not, however, vesication, but rather that of a cautery ; the cuticle, and the extremities of the subjacent vessels, appearing to be destroyed by them. It has been said that vesica-

tion could not be produced in some stages of cholera, because the production of serum was, in common with the glandular secretions, arrested; but when we reflect on the readiness with which serous fluids are poured out in that disease, we shall be rather disposed to refer the failure in the action of vesicatories, even of hot water, to the diminution or destruction of the nervous energy of the skin. It is certain that, in a body *but just dead*, the application of boiling water will vesicate readily; and if the accuracy of the observation respecting its non-vesicating power in advanced stages of cholera be established, we must infer that there is less vitality in the skin in such cases, the patient being still alive, than in that of a body *recently* dead of some other disease.

"At a very early stage in cholera, leeches can procure little or no blood from the skin. This fact is noticed by some in another sense, as if these animals turned in abhorrence from the skin of a person ill with cholera. When the sweat is thin, it is usually poured out, in large quantity, from the whole surface of the body; but when thick or clammy, it is more partial, and generally confined to the trunk and head. The action of the vapour, and hot baths, seem unquestionably to increase the exudation, or secretion from the skin; and the application of dry heat, as the natural temperature of the skin augments, appears to restrain these discharges—circumstances not very compatible with the supposition of a state of spasm of the vessels of the skin. The perspiration or moisture is often free from odour; at other times it has a fetid, sour, or earthy smell, which has been said to be peculiarly disagreeable, and to 'hang long about the nostrils' of the by-stander." *

Fever.—Pulse like a fine thread; imperceptible in one wrist, barely perceptible in the other; quite imperceptible;

* Scot, op. cit.

when again felt, very small and quick, so that it cannot be counted.

Moral symptoms.—Great anxiety; inquires anxiously whether she will recover; afraid of instant death; begs us not to leave her or she will die; despair of recovery; cries out, "I am dying: I cannot live."

Head.—Vertigo; headach; noise in the head.

Eyes.—Eyes sunk, open, glassy; eyeballs leaden-coloured; eyes inflamed. The affection of the eye is peculiar and characteristic, so that it is sometimes called by the natives of India the "red-eye sickness." Mr. Scot* gives the following account of what he himself observed:—"While looking earnestly into the countenance of a patient, I saw the vessels of the conjunctiva deeply injected with blood in a moment of time. I was able distinctly to trace its progress: it was arterial blood, propelled in a jet from the back part of the globe of the eye, forward to the verge of the cornea, presenting that appearance sufficiently known in cholera, and which has led the natives of India to denominate it as the 'red-eye sickness.'"

Ears.—Noise in the ears; deafness.

Face.—Cold; livid; blue; pale and anxious; sunk and ghastly; expression uneasy, wild, of terror; dejected; haggard; features contracted and sharpened; cold perspiration in face; twitching of the muscles of the face.

Mouth.—Dark areola round the mouth; lips cold and flabby; tongue bluish, cold, flabby, and moist; feels like a piece of raw meat.

Throat.—Sensation of choking; inability to swallow.

Appetite.—Insatiable thirst. "*Intensissima sitis.*"

In one instance, a poor woman drank all the water out of a bottle of hot water put at her feet to warm them. The intense thirst was one of the most painful symptoms.

* Op. cit., p. ix.

Stomach.—Vomiting—first of food, then of a whitish flocculent fluid, violent and constant—of a frothy liquid; inodorous liquid; greenish watery liquid; brown slimy matter; white liquid, with painful retching; yellow liquid; blackish matter along with the water drunk; dark coffee-ground-like liquid; clear water in great quantities; dark red liquid with sour smell; bloody liquid twice with coagula; severe pain in the stomach; roaring furiously from pain in the stomach; soreness on pressure; burning in the stomach.

The vomiting in cholera is quite peculiar. It resembles the gush which would follow a large slit in a wine-skin full of water. It comes away in vast streams, without any effort sometimes on the part of the patient.

Abdomen.—Borborygmus; pain in epigastrium; increased on pressure; weight in epigastrium; severe pain in abdomen; soreness; tenderness on pressure; pain in bowels as if grasped by nails; pain increased by motion; cramps in the abdominal muscles; the muscles raised, hard, arched, as in pregnancy; during the cramps the muscles feel drawn into knots.

Fæces.—Constant desire to pass stools; in gushes when vomiting; in a constant stream; scalding, watery, inodorous; thin and bilious; white like gruel; a colourless fluid, with white flakes; watery, with a grey flocculent cloud; green liquid; dusky red liquid, with brown and white flocculi.

On this subject Mr. Scot writes:—

"The dejections are sometimes made without effort or uneasiness; at others, they are thrown out with great force, which has been compared to the squirt of a syringe. They also sometimes take place simultaneously with vomiting, spasm, and stoppage of the pulse, as if all these affections originated, at the instant, from one common cause. There is seldom much griping or tenesmus, although the calls are very sudden, and are irresistible. Pain on pressure of the

abdomen is only occasionally noticed. In advanced stages of the disease purging generally ceases; but, in many cases, a flow of watery fluid from the rectum takes place on any change of position. The matters evacuated, after the first emptying of the bowels, have been occasionally observed to be greenish or yellowish, turbid, of a frothy appearance like yeast, and sometimes bloody. In some cases they are inodorous, in others they have a rank fleshy smell. In one fatal case, pure bile, it is said, was discharged. Perhaps much of this variety may depend on the previous state of the large intestine, especially in Europeans, who so generally labour under a morbid condition of that organ; but by far the most common appearance is that of pure serum, so thin and colourless, as not to leave a stain on the patient's linen. The next in order of frequency is the congee or rice-water-like fluid; the mucus is at times so thoroughly mixed, however, with serum, as to give the whole the appearance of milk or chyle. The evacuations have also been observed to resemble soogee in colour and consistence; and these cases were mild. Worms are very commonly discharged by stool. The reappearance of fæcal matter, especially if tinged with bile, seldom, perhaps never, takes place till the disease has been subdued. The quantity of the clear watery fluid, which is sometimes discharged, is exceedingly great; and, were it uniform, it might afford us an easy solution of the debility, thirst, thickness of the blood, and other symptoms; but it is unquestionable that the most fatal and rapid cases are by no means those which are distinguished by excessive discharges. We have innumerable instances, on the contrary, of death ensuing after one or two watery stools, without the development of any other symptom affecting the natural functions. Even collapse has come on before any evacuation by stool had taken place."

Urine.—Suppression of urine.

This is one of the most important symptoms of the disease. It is rarely absent; and until it be overcome, although all else looks favourable, there is always ground for great anxiety. The following case illustrates this well. In it all the other symptoms had subsided, and we had every reason to expect a favourable termination; but he died:—

"Case XVII.—J. H., aged 38.—Intemperate habits. He was drinking to excess yesterday; was seized at 10 last night with vomiting and bowel complaint. We saw him first at half-past 7, A.M., 13th November. Watery purging through the night, none since 9, A.M.; urinated about an hour ago; severe cramps in legs, arms, hands, and side; body warm; feet, hands, and face cold and livid; pulse 106, small, weak, and indistinct; voice hoarse; great thirst.

"Tinct. Camph. every five minutes.

"10, A.M.—Cramps in legs very severe; in other respects the same.

"Verat. 3d dil. and Cupr. 3d dil. alternately every quarter of an hour.

"4, P.M.—Severe cramps in his legs, and frequent vomiting; voice low and hoarse.

"Continue Verat.

"14th, 9, A.M.—Vomiting continues every few minutes; bowel complaint abated; no urine since yesterday afternoon; great thirst and hiccough; voice stronger; pulse 76, small.

"Arsen. 3d dil. and Nux vom. 3d dil. alternately every half-hour.

"10, P.M.—Pulse 100, small; vomiting continues; tongue covered with white fur, warm; no pain at epigastrium; slight cramps in the legs continue; no urine passed.

"Canthar. 3d dil. every half-hour.

" 15th, 9, A.M.—Slept well; no urine passed; very little vomiting.

" Nux vom. 1st dil. every half-hour.

" 12 noon.—Vomiting ceased; frequent ineffectual inclination to urinate.

" Digital. 3d dil. every half-hour.

" 9, P.M.—Still no urine passed; one abundant bloody stool.

" Hellebor. 6th dil. every half-hour.

" 16th, 10, A.M.—No change.

" 10, P.M.—Still no urine passed.

" 17th, half-past 8, A.M.—Speaking indistinctly; he complains of pain in his chest; it sounds clear on percussion; respirations 30; pulse 68; tongue dry; slight strabismus; no urine passed; no pain or fulness over the pubis; some difficulty in swallowing; hands cold, shrivelled, livid.

" Stramon. 9 dil. every quarter of an hour.

" 3, P.M.—No improvement.

" Laches. 6th dil. every quarter of a hour.

" 9, P.M.—He died a few minutes before this visit, on 17th November."

Larynx.—Voice husky, varies; at one time clear, at another hoarse and indistinct; feeble and moaning, scarcely audible; a hollow whisper.

The voice in cholera is so peculiar that it has received a particular name, called " vox cholerica." Although frequently present, this is by no means a constant symptom.

Chest.—Breathless; breathing much oppressed; gasping; sighing; spasmodic catching of the breath; catching pain at precordium; cutting pain at right side, which catches the breath; heaving of the chest; breath perfectly cold; very fetid; he rubs his chest with his hand; complains of oppression of chest; palpitation of the heart; heart's action

very feeble; not perceptible by the hand; complains of oppression of the heart—says "it is bursting;" complains of the weight of the bed-clothes—throws them off.

As we before mentioned, in almost all the severe cases, the heart seemed the organ, the disturbance of which most sensibly affected the patient. Some strange, inexpressible, distressing sensation about the heart seemed altogether to overwhelm them; and whenever this was removed, there was an expression of extreme relief. We may give a case in illustration of this:—"A respectable woman was suffering much from pain in the limbs and excessive uneasiness at the heart, after taking some medicine, she exclaimed, 'God be thanked, my heart is getting better.'"

Trunk covered with warm perspiration, the extremities being cold; cramp in intercostal muscles; pain in the loins; pain in the right side; severe pain in the back; cramp in the muscles of the back.

Arms.—Severe cramps in the arms; cramp in the wrist; hands livid, cold, and clammy; skin of the fingers livid and corrugated; nails blue; fingers crooked, and the whole hand distorted during the cramps.

Legs.—Violent pain in the legs; violent cramps in the thighs and calves of legs; cramps in feet; toes drawn down by cramps; feet cold and blue; quick spasmodic quivering motion of the fibres of the muscles of the calf of the leg. During the cramps, the muscles feel as if drawn into knots or balls; whole limb livid and cold; skin of toes shrivelled and corrugated; nails blue.

The majority of patients partially recover from this state of collapse; although in some instances, especially at the commencement of the epidemic, there is no reaction whatever. The following case is a striking example of a person

struck down by the poison, and dying without an effort, as an ox dies from a blow upon the head:—

"Case X.—Mrs. F., aged 46, went to bed in her usual health between nine and ten, P.M., on the 29th of October; felt pain in the head and chilly during the night, and especially between three and four o'clock the following morning, when the bowels were copiously moved, and she began to vomit with each evacuation of the bowels, which occurred every eight or ten minutes; had also cramps in the legs and pain at epigastrium. When seen first, a little after six o'clock of the same morning, her face was cold and ghastly, and had a peculiarly melancholy expression; she frequently repeated the words, 'What is with me? I cannot live, I cannot live.' She was very restless; the pulse languid and intermittent, and the skin ice cold; she complained of pain in the loins.

"Secale, 1st dil., every five minutes.

"After a little time, she was violently cramped in the fingers and toes. She then got camphor, repeated at short intervals. There was no vomiting for quarter of an hour; pulse became more languid, 76 in a minute, scarcely perceptible; vomited and purged twice during the next quarter of an hour; very restless; sighing and panting for want of breath.

"She then got arsen. 3d dil.

"Quarter past 7, A.M.—Pulse gone; cold clammy perspiration; vomiting of a pale-white, watery liquid, with gurgling in the throat.

"Carbo. veg. 3d trit., alternately with Ipecac. 3d dil.

"9, A.M.—Collapse continues. Vomited once, and bowels not open; fits of excessive restlessness, and cramps occasionally in the fingers and toes. Continue medicine.

"12 noon.—Much the same; no vomiting or purging; great thirst; flying pains through the body.

"Pulsat. 3d dil.

"3, P.M.—No change. Voice became a whisper. Her words were, 'There will never be ease for me in this world.'

"8, P.M.—Has been quiet and speechless from 5, P.M. Is quite insensible. Bowels twice opened. Died at half-past 8, P.M., of the 30th."

The stage of reaction takes place with more or less rapidity. The more gradual it is the better. It is not necessary to give a detail of the symptoms of this stage, for they differ only in a few particulars and in degree from the preceding stage. There may be reaction to almost any amount, from a slight increase of warmth to a complete return of the pulse, and yet the patient may not recover. In most of the fatal cases, there was partial reaction; and till we became conversant with the turns of the disease, we were sadly disappointed to find, after an apparent approach to recovery, a sudden and almost instantaneous sinking of all the vital powers. We may give a case in illustration, in which the pulse reappeared, vomiting and purging ceased, cramps diminished, and the patient was bathed in warm perspiration, and yet died a few hours after all these favourable symptoms:—

"CASE VI.—R. A., aged 30, a man of intemperate habits, who had been drinking whisky the previous day, but otherwise in his usual health. He was seized with vomiting and purging and cramps about midnight of the 24th of October; and when seen at 5 o'clock the next morning, he was found standing on the floor roaring with pain. His face was pale and anxious; his lips and breath were quite cold; no pulse could be felt, and he could not move from where he stood from the violence of the cramps. Alvine evacuations watery, what he vomited was tinged with blood.

"Camphor to smell, and afterwards arsenicum, 3d dil., frequently repeated.

"Half-past 8, A.M.—Profuse warm perspiration over the whole body; no vomiting or purging; slight cramps; urine suppressed; great thirst; pulse barely perceptible.

"11, A.M.—Countenance cadaverous; very breathless; moaning from pain. Sunk and died at half-past 1, P.M., twenty-five hours ill, and twenty hours under treatment."

It only remains for us now to describe the symptoms of the consecutive fever into which patients sometimes fall after coming out of the other stages of the disease. We have had but little experience in this form of the disease, as there were only four cases of consecutive fever, out of 236 cases of cholera, treated homœopathically; whereas, out of 230 cases treated at the Cholera Hospital, there were 39 fatal ones from this cause. Two out of our four cases recovered. So that out of 236 cases we had two deaths from the consecutive fever; and in the hospital there were, out of nearly the same number of patients, 39 deaths. We advert to this here in passing, and shall reserve a fuller comparison of the results of treatment for the next Chapter.

SYMPTOMS OF THE CONSECUTIVE FEVER.

General symptoms.—Uneasiness, restlessness, hiccough, stupor, insensibility.

Skin.—Hot and dry, or hot and moist.

Sleep.—Drowsy; ineffectual desire to sleep; starts in her sleep.

Fever.—Pulse slow and weak, and full.

Moral symptoms.—Insensibility, delirium; low muttering delirium.

Head.—Pain in the head; noise in the head.

Eyes.—Eyes inflamed; conjunctiva of lower half of eyeball injected; strabismus, blindness.

Ears.—Deafness.

Face.—Sunken; twitching of the muscles of the face.

Teeth.—Grinding of the teeth; teeth covered with black sordes.

Mouth.—Tongue dark and brown, dry and glazed, dry and bleeding; speech indistinct; speechless.

Throat.—Burning in the throat; dry and painful when swallowing; sensation of choking; inability to swallow.

Appetite.—Great thirst.

Stomach.—Occasional vomiting of greenish liquid; burning pain at epigastrium.

Fæces.—Dark-brown liquid.

Urine.—Suppression of urine; very scanty; passed with pain.

Chest.—Breathing much oppressed; gasping; sighing.

Trunk, Arms, and Legs.—Pain and uneasiness; occasional slight cramp in legs.

We have not in this enumeration entered all the symptoms common to the fourth stage and the two preceding ones; but we believe, that after the perusal of the following case, which was very carefully observed, the reader will have no difficulty in forming a tolerably accurate picture of this fatal disease:—

"Case XV.—B. S., a healthy-looking young woman of 21 years of age, living in a comfortable room, had been quite well till 2 o'clock, P.M., of the 2d November, when she became affected with nausea, for which she got some Allopathic drugs, after taking which she began to vomit. She was seen at half-past 11 o'clock, A.M., of the 3d; had been vomiting clear water, and passing watery stools, all the previous night. The surface was cold; the pulse 120, feeble; the tongue red with

frothy margin, and warm; there was slight pain at epigastrium on pressure; no pain anywhere else; felt giddy when she rose.

" Secale, 3d dil., a dose every quarter of an hour.

" Half-past 2, P.M.—No better; violent vomiting of dingy fluid; cold arms and hands; pulse feebler. Had passed little urine the previous night.

" Arsen. 3d and Verat. 3d,
a dose every quarter of an hour alternately.

" Half-past 3, P.M.—Pulse scarcely perceptible; much vomiting; lips and nose cold, breath warm; complained of the urine being scalding.

" Cantharid. 3d dil. and Arsen. alternately.

" 5, P.M.—Vomited twice and purged once since last report. Pulse 120 to 132, feeble.

" Ipecac. 1st dil., followed by former medicines.

" Half-past 7.—Vomited and purged twice; pulse 120; face bluish, cold; tongue cold; no cramps; much pain in epigastrium.

" Arsen. 3d, every quarter of an hour.

" Quarter past 9, P.M.—She had taken cold tea, followed by vomiting, which had continued ever since.

" A dose of Ipecac. 1st dil.,
followed by Arsen. 3d and Canth. 3d alternately.

" Quarter to 12, P.M.—No vomiting since last report. Purged once; catching pain in the precordial region when she breathes deeply; very thirsty, the more she drinks, the worse is the thirst.

" Cuprum, 6th, one dose, and Arsen. and Canth. as before.

" Nov. 4th, quarter past 7, A.M.—Had cramps about 3 o'clock in the morning in the calves of the legs and wrists; vomited three times and purged twice; so thirsty that she drank all the water in the bottle applied to her feet; pulse

112, weak. She looks better, and the voice is stronger; occasional cramps in the wrist.

" Cuprum, 6th, one dose,
afterwards Arsen. and Veratr. alternately.

" Half-past 9, A.M.—Pulse 100; tongue and skin warmer; stools darker, more fæculent; great thirst.

" Continue Arsen. and Veratr.

" 3, P.M.—Pulse 108; vomited three times a green watery fluid; bowels twice moved; complains of burning in the throat; no urine.

" Canth. 3d and Arsen. 3d alternately.

" 8, P.M.—One copious brown stool; pulse 90, wiry; great thirst; cramp in the leg.

" One dose of Cupr. Acet. 3d,
and afterwards Arsen. and Veratr. every half-hour.

" Nov. 5th, 10, A.M.—Much better; skin and breath and tongue warm; slept several times for a short time; has had much ineffectual desire to make water.

" Canth. 3d and Arsen. 3d, alternately every half-hour.

" 11, A.M.—Pulse 88, stronger; purging a little brown water; less thirst.

" Arsen. 3d, half-hourly.

" Nov. 6th, 1, A.M.—Sound asleep, quite warm, and pulse natural. Continue medicine.

" Half-past 11, A.M.—Bowels were moved two or three times, and the evacuations were reported to be dark. The tongue is dark-brown; pulse 88, strong. Complains of much general uneasiness; no urine has been passed. Ordered a little arrow-root.

" Terеb. 3d dil. hourly.

" Half-past 11, P.M.—The tongue is dry and red; pulse 88; great general pain complained of; bowels once moved; inflammation of the eye.

" Continue Tereb.

" Nov. 7th, half-past 9, P.M.—Bowels only once moved to-day, the evacuation dark and thin; some urine passed; face flushed; tongue red; breathing oppressed. She had got up and gone into the kitchen, along a stone floor, and had eaten a part of an apple.

" Bellad. 3d dil., a dose every hour.

" 8th, half-past 9, P.M.—Little change; had passed urine three times.

" Arsen. 3d and Bell. 3d alternately, hourly.

" Nov. 9th, noon.—Very delirious; blood coming from the mouth; tongue red; great thirst; pulse jerking, feeble, about 80.

" Continue Bellad. 3d dil.

" 7, P.M.—Much tossing; tongue and lips dry and bleeding; eyes staring; hands cold; pulse slow.

" Arsen. 3d dil.

" 9, P.M.—Laborious breathing; bluish, speechless; pulse 75; seems insensible.

" Laches. 6th and Arsen. 3d alternately, every half-hour.

" 10th, 8, A.M.—Hands and arms cold; breathing laborious; lips and teeth covered with black sordes; passed a very restless night; no purging or vomiting; cannot speak, but is sensible when spoken to.

" Bell. 3d dil.

" She died at 6, A.M., of the following morning."

CHAPTER V.

ITS TREATMENT.

We have no sympathy with the philosophical scepticism and the elegant dilettantism which is now becoming fashionable in the medical profession. We can perfectly understand a Dr. Sangrado confiding in his lancet and his hot water, or a Dr. Slop astonished how it was possible that any children came into the world before the invention of his crotchet; but we cannot understand how clear-sighted and conscientious men can practise medicine, and avow their distrust of the means they use. The late accomplished editor of the British and Foreign Medical Review has set such an unblushing example of a profession of no faith in physic, which he nevertheless continues to prescribe, that we may look upon him as the best specimen of a numerous and fast increasing class, if not as actually the head of a school, which he denominates "young physic," but which he ought to have called the no-physic school. Among the reasons of his unbelief, we have the following:—

"Lastly, we must advert to what is, perhaps, the most extensive and valuable source of all—the actual practice of the more scientific physicians of all ages, in the latter part of their career,—men of philosophic minds as well as of much experience. It is well known, from the history of physic, that a large proportion of men of this class have, in their old age, abandoned much of the energetic and perturbing medi-

cation of their early practice, and trusted greatly to the remedial powers of nature. The saying of a highly respected and very learned physician of Edinburgh, still living at an advanced age, very happily illustrates this point. On some one boasting before him of the marvellous cures wrought by the small doses of the Homœopathists, he said, 'this was no peculiar cause for boasting, as he himself had, for the last two years, been curing his patients with even less, viz., with nothing at all!'"

The effect of this doctrine upon the profession must be most disastrous. Without a strong faith there can be no strong action. But not only can there be no hearty trust in the measures they employ, but there must be a continual dissimulation. If they make it known that they intend giving no medicine, will patients go to them for medicine? Surely not. They will be obliged either to have no patients then, or to pretend to give physic when they are giving nothing. Is this position tolerable for an honest man? We believe that in no profession, not even in the Church, is a high morality so essential as it is in the delicate confidential intercourse between a physician and his patient. And if a patient comes to know that his physician has been systematically deceiving him, will that knowledge not first degrade the profession in the eyes of the public, and in so far as that profession ramifies through all the branches of social life, will it not, instead of elevating the standard of public morality and protesting against the prevailing insincerity of the age, be the most contaminating of all the evil influences which are fast corrupting our whole social frame? It may seem absurd to find any connexion between Red Republicanism and Young Physic. But we believe that the flag of terror which is now waving over all Europe is the necessary result of a system of deceit, and that every one who advocates or prac-

tises hypocrisy, is doing, in his own sphere, what he can to prepare the soil of our land for those "trees of liberty" which men plant upon the grave of freedom, and that righteousness by which a nation is established.

These reflections were forced upon us by the easy, self-complacent tone of the organs of the medical profession in regard to the various means of treating the fatal epidemic which is even now at our door.

A writer on the subject in the Medical Gazette, for October 15, 1847, observes:—"The Homœopathists have boasted of their success in treating cholera; the secret of this is, that they did not interfere so much as regular practitioners, and gave full play to the *vis medicatrix naturæ*." This seems an acknowledgment, that it would be better for the thousands who are likely to take cholera to have no "regular" physicians allowed to meddle with them.

We are hardly disposed to go so far as our opponent in his admissions against himself; but there is one thing which certainly rather confirms his view of the case, and it is this, that under the most opposite methods of Allopathic treatment, and in the most varied circumstances, the mortality, both in this and the previous epidemic, has been nearly exactly the same. We may quote again from Mr. Scot's book:—

"It seems unnecessary to pursue this part of the subject farther: it is manifest that, after the lapse of about thirty years, no material change has been made in the treatment of cholera. Not that new remedies and new plans of treatment have not been abundantly proposed—many of them of the most opposite nature—but that, after trial, almost all have been abandoned; and we now find professional men constantly and silently recurring to the old routine, if we may so designate it. But the most surprising, the most

melancholy, and the most mortifying thing of all is, that, under every method of treatment hitherto pursued, in any quarter of the world, the average rate of mortality of cholera continues much the same—certainly not diminished, perhaps rather augmented. We possess no means of judging correctly of the relative mortality from cholera, as it may be affected by climate. To attain that object, we should have returns of the cases of cholera occurring amongst the natives of India of all classes, in several districts, towns, or villages, to contrast with similar returns in Europe. The chief difficulty, however, in India, would be the incorrectness of such returns, not much dependence being placed on the judgment or fidelity of the native doctors, or the native revenue servants, usually employed on that duty. The only return of this description which seems entitled to consideration, relates to an extensive district to the northward of Madras. It exhibits an aggregate of 14,723 cases, yielding 4345 deaths, scarcely 30 per cent. In some villages, the mortality rose to 89 in 100, 10 in 13, 48 in 70, 99 in 143, when there was either no medical aid, or when it was refused. In the principal town, where the European medical officer resided, and where classification would be more correct, the rate was 40 per cent. The returns in this country, at present published by the Board of Health, are generally said to be incorrect, and not to exhibit the numbers actually seized with cholera. If, however, they give a true account of the events of the cases entered, it is sufficient for our present purpose. Now, up to 22d February, these returns give 12,621 cases, 5595 deaths, 3840 recoveries, and 3186 remainders, which exhibits a ratio of mortality of only 44 per cent.; but, taking this per centage of 44 out of the remainders, 3186, it yields 1400 to be added to the deaths, and the real rate of mortality will be found to be at least 55 per cent."

In Russia, from the 16th of October 1846, to the 23d of June 1848, the number of persons attacked by cholera was 200,318, and out of these 116,658 died, giving a mortality of 57 per cent.*

According to Lasègne, there is little difference in the mortality in the former and recent epidemic. In Moscow, on the former occasion, the number of cases was 4461, the deaths 2425, giving a mortality of about 54 per cent.; so that we may safely state, that invariably under Allopathic treatment, the mortality exceeds 50 per cent.

If we find that under Homœopathic treatment the mortality is invariably less, we think we may be excused entering into any detail of the various remedies used by the old school; for even with our better medication, the mortality is very great, and we are but little disposed to encounter the certainty of a great increase in the number of deaths. We propose then adducing proof of the lesser mortality of cholera under Homœopathic than under Allopathic treatment, and in doing so we shall only take a small portion of evidence, but shall try to sift it well, so that it may be thoroughly relied on; and we shall call no witnesses but those for whose integrity we can vouch, or who can be shown to be worthy of credit by the expressed opinions of their opponents.

Although we have stated the general mortality of the cholera in the last and present epidemic at about 55 per cent., the number of deaths in hospitals was much greater. In the Cholera Hospital of Edinburgh during the present epidemic, out of 230 admitted, 149 died, and only 68 recovered; which in round numbers may be stated thus—that two out of three die, and one out of three recovers.†

In Dr. Lichtenstadt's Cholera Hospital in Petersburgh,

* Müller, op. cit.

† Monthly Journal, January 1849, p. 456.

during the last epidemic, out of 636 cases, there were 317 deaths.* Dr. Dudgeon, in his able and interesting pamphlet on the subject, calculates the mortality at 57 per cent. in the Allopathic hospitals. We are disposed to think that he has rather under-estimated it. According to Mr. Wilde, the present editor of the Dublin Medical Review, whose acquirements in all departments of knowledge bring back the idea of a bygone time when the physician was a man of universal accomplishment, states in his work on Austria, that the mortality in the general hospitals in Vienna of the cholera, during its prevalence in 1831-32, was two-thirds of those attacked.†

Dr. Müller,‡ speaking of the present epidemic, estimates the mortality at two-thirds of all the cases; so that in comparing the results of the treatment of cholera in Vienna under the two systems, we need not hesitate to accept of Mr. Wilde's statement as true in the main,—that is, out of all the patients in the Allopathic hospitals treated for cholera, two-thirds died, and only one-third recovered; or, out of 1000 taken into the hospital, above 700 were carried out dead, never again to see the face of their friends. The number of families suddenly left destitute by this mortality is worth considering; for when we see figures representing the amount of deaths, we are apt to forget that almost each unit stands for a little cluster of human beings who are more or less affected by its extinction.

The Homœopathic Hospital was conducted by Dr. Fleischmann, of whom Dr. Forbes (who might be called the Peel of Old Physic—for a more complete surrender of a party was never effected than was done in his memorable article, in-

* Dudgeon's Treatise on Asiatic Cholera, p. 24.

† Austria, its Literary, Scientific, and Medical Institutions, by W. R. Wilde, M.R.S.A. Dublin, 1843.

‡ Op. cit.

titled, "Homœopathy, Allopathy, and Young Physic," in the British and Foreign Medical Review) thus writes:—"Dr. Fleischmann is a regular, well-educated physician, as capable of forming a true diagnosis as other practitioners; and he is considered by those who know him as a man of honour and respectability, and incapable of attesting a falsehood." He says:—

"For many years, the ordonnances against Homœopathy, with all their oppressive accompaniments, weighed heavily upon us; and although, in the course of such a length of time, now and then something was effected in our favour, yet, as this was never done by medical men, little impression was produced, and no results. The cholera, which tended somewhat to lessen the reputation of the medical world, was the means of granting medical liberty. I received from Government a charge to tender a report upon the cholera, and the best mode of treatment, (in this epidemic, I for the first time used purely and solely Homœopathic remedies, although the *Proto-medicus** came, in the commencement, daily,) and to relate my experience on the subject. I made a report, (the essential points of which I shall briefly state,) at the same time I requested an audience, which was granted me by his Excellency Count von Kolowrat, when I presented him with a copy of the report, at the same time requesting him to take Homœopathy under his protection. His Excellency, a man of the most philanthropic disposition, whose constant endeavour it is to advance and countenance all that is good and valuable, acceded to my request, and a fortnight afterwards, it pleased his Majesty to issue an edict revoking the former prohibition of Homœopathy, demanding, at the same time, proposals from the Homœopathic practitioners for putting a check on charlatans, (had a check long since been

* The Government Medical Inspector.

put on charlatans—by whom I don't mean those alone who have no diploma in their pocket—of whom Dante says—

'Questa è la vipera, volta nel ventre della madre,'

a great opprobrium would have been eradicated from our profession,) and so regulating the dispensing business as not to interfere with existing laws. The proposals were made, and the result we are now looking forward to.

"*The Report.*—The first table shows the number of those affected, cured, and who died in each police district;* in the second is seen what sex and age (at least, among 732 individuals) were most subject to its ravages, and, at the same time, where and at what time the mortality was greatest.

* We have omitted this table as being irrelevant.

Age.	Received.		Recovered.		Period in hours within which Males died after admittance.						Total.	Period in hours within which Females died after admittance.						Total.
	Males.	Females.	Males.	Females.	3.	6.	9.	12.	15.	24—x.		3.	6.	9.	12.	15.	24—x.	
1— 5	...	9	...	6	...	...	..	...	...	...	...	...	1	...	...	...	2	3
5—10	12	11	9	10	1	1	...	...	...	1	3	1	...	...	...	...	...	1
10—20	67	76	54	65	1	2	1	1	...	8	13	...	1	...	5	...	5	11
20—30	68	122	46	94	3	6	...	4	1	8	22	...	4	1	4	2	17	28
30—40	43	68	27	52	3	2	1	2	1	7	16	1	4	...	1	...	10	16
40—50	42	61	24	38	1	1	2	3	3	8	18	8	1	...	1	...	13	23
50—60	37	44	17	22	1	2	3	...	...	14	20	1	...	...	3	...	18	22
60—70	17	27	4	9	5	2	...	1	1	4	13	2	3	1	1	...	11	18
70—80	9	15	5	5	2	...	...	1	...	1	4	2	...	2	...	...	6	10
80—90	...	4	...	1	...	...	...	...	...	...	...	2	...	...	...	...	1	3
Total,...	295	437	186	302	17	16	7	12	6	51	109	17	14	4	15	2	83	135
	732		488		244													

" As regards the treatment of these 732 patients, I differed from the general practice, with the exception of a few cases which I shall afterwards allude to,* and, as the result shows, I had no reason to repent so doing. I did so, not from any blind zeal for a system, concerning whose truth or falsity a bitter contest is going on—I was influenced by no private interest, for I had previously refused to accept the salary awarded me by the Government for my services; but when I called to mind the diverse modes of treatment adopted by innumerable physicians in all countries, as far as I could ascertain these from their writings, I could not but look at my position with anxiety; I could see no inducement to tread in the ordinary well-beaten path; my duty, my conscience, urged me to try some other methods. Strifes about a theory—which could not be of such importance in this case—I wished to leave to the arena of the schools, and employ only the practically useful, to the efficacy of which many had borne witness, and which had been tested also by myself in other diseased conditions, that so I might learn what inducements the new way held out, the old one being so unpromising.

" On looking back to the results of this treatment, (and the value of any mode of treatment is to be judged of from its results on a large scale, since we have no other method of forming a judgment,) on considering that more than one-half of my patients were from a district (Wieden) where the epidemic in 1831 and 1832 had been most severe, and had had most victims, where this year it had raged for the longest period, that this circumstance was not a little dis-

* " I treated four patients with calom. and jalap; two with acid. nitr. fum.; four with sp. sal. ammon. caust.; six with muriate of soda, but all these died: of forty convalescents, where the practice of both schools indicated the same remedy, I gave it in Allopathic doses, yet without obtaining any result."

advantageous to the success of the trial, as many were received who had already been dosed with violently acting medicines and spirituous domestic remedies, and thus were rendered comparatively insusceptible to the influence of my small doses, I cannot refrain from stating as my inward conviction, *that the Homœopathic is the best mode of treatment of the cholera, until at least reflection, experience, or accident suggest a better method.*"

We perceive from this table that out of 732 persons admitted, 488 were restored to their friends, and 244 were carried out dead. Suppose that these 732 had been taken to an Allopathic hospital, what would have been their fate? We have every reason to believe, that of the 488 whom we find returning to their homes, one-half would have been left behind among the dead. We cannot wonder at the Austrian Government, although about the most bigoted in Europe, shrinking from the responsibility of prohibiting a mode of practice which proved itself to be so much more successful in the dreadful plague which was as destructive to its subjects then, as Kossuth and Bem seem to be to its soldiers now.

The only other hospitals that we know of, in which Homœopathic treatment was employed during the former epidemic, were one at Berlin under Drs. Heynel and Stüler, and one at Bourdeaux under Dr. Mabit. In the former out of 32 cases there were 6 deaths, and in the latter, the same number of deaths out of 31 cases. We mention this for its historic interest, as the numbers are too small to afford data for any calculation; so far as they go, however, they confirm the results of the Vienna hospital.

In the present epidemic the only notice we have of the results of Homœopathic treatment is in Dr. Müller's Report regarding the cholera in Petersburgh. He says, "The results of Homœopathy have on the whole here not been unfortunate, and on that account it has been partially imitated

by other practitioners. In the Homœopathic hospital, whose lists I have myself carefully examined, there have died hitherto three-eighths of the patients, among whom, however, the milder cases are included."

In adverting to this, a writer in the British and Foreign Medico-Chirurgical Review, the periodical that has succeeded the one we formerly spoke of, as having been conducted by Dr. Forbes, and which died of "Young Physic," after omitting to mention the fact of Homœopathic treatment having so commended itself to the profession in Petersburgh as to be partially imitated, says, "We do not think the Homœopathists have much reason to congratulate themselves on their success. If the choleroid cases are included in the lists, the mortality of 37 per cent. is very high. We suspect that their success was about commensurate with the philosophy of their creed, and with the general truth of their statements, in neither of which do we put the slightest faith." Let us observe that the only source of this writer's information is the paragraph we have quoted at full length from Müller's Report, a work impossible to be obtained in this country, and which we had to get from Germany; that in his report the word choleroid cases does not occur—that he evidently believed the results of Homœopathic treatment to be successful—that the other physicians of the place believed them to be so successful that they were led to imitate them in the means they employed—that there is not a word to make us believe that the cases were not true cholera cases—some severe and some slight, as are met with in all hospitals: let all these facts be kept in mind, and then let us decide whether the Austrian Government, (if there be one,) or the medical profession of this country, be on the whole the most liberal. We do not so much blame the poor author of this paragraph; unfortunately in the present state of things, people must write to please their readers, (sad degra-

dation!) and if they dare to tell them unpalatable truths, they are immediately forced either to retire or to retract. Dr. Forbes, the former editor said, he believed Homœopathic physicians to be capable of recognising disease and incapable of direct falsehood. Dr. Forbes was too liberal, he therefore retired, and in his place we have this writer, who says, he does not put the slightest faith in the statements of Homœopathists. Alas, for a profession which silences those who speak the truth, and rewards those who conceal and pervert it!

It is much more difficult to obtain important data from private and dispensary practice than from the results in hospitals. There is such a variety in the cases called cholera. However, there is one remarkable coincidence about the few Homœopathic practitioners whose own testimony we have examined, and that is, that the mortality in their hands seems to have borne a pretty accurate proportion to the average Allopathic mortality, rising and falling with it, but always keeping much lower through all its fluctuations.

Dr. Rummel, who is thoroughly to be depended upon, states, in a paper read before the Homœopathic Assembly at Cothen, in August 1832, that the comparative results of his treatment, and that of his Allopathic brethren, were as follows:—

	Cases.	Cured.	Died.	Remaining.
Under Allopathic treatment,	164	47	101	16
Under Homœopathic treatment,	46	28	16	2

This gives a mortality of about 1 in 3 for the Homœopathic, and 2 in 3 for the Allopathic. The disease seems to have been very malignant at Merseburg when Dr. Rummel treated it, and he seems carefully to have excluded from his list all equivocal cases.*

When the cholera appeared in Moravia, Dr. Gerstel, who had already treated it Homœopathically, was sent thither, and

the following testimonial was given him by the Government district-physician, Dr. von Merk :—"As regards the duration of the prevailing epidemic, this was in some districts extremely short, and the course rapid and severe ; the result, owing to the judicious treatment, generally favourable ; hence the proportion of deaths compared to other places where the epidemic raged was small. The Homœopathic treatment, which was carried out here to a great extent by Dr. Gerstel, was the cause of the favourable result."*

Our countryman, Dr. Quin, being then on the Continent, and acquainted with Homœopathy, having heard of the severity of the disease in Moravia, and how Dr. Gerstel was engaging it single-handed, with the gallantry of a crusader, started to join him, and oppose the rapidly advancing foe. His life had nearly paid the forfeit of his devotion. He was seized with cholera, but rapidly restored, and was enabled to be of great service to the sick. The chief magistrate of the town, one Ernest Dieble—a sort of Lord Provost (very unlike ours, as will be seen by and bye)—by the desire of the Council, sent him a letter of thanks, couched in very flattering terms, and what is of more consequence, a certified list of the number of deaths under the various modes of treatment. From this we learn that the number of inhabitants was 6671 ; that from the 7th November 1831, to the 5th February 1832, 680 were attacked, and of these 540 recovered, and 140 died. The deaths and recoveries being thus distributed :—

	Affected.	Cured.	Died.
Treated Allopathically, . . .	331	229	102
Treated Homœopathically, . .	278	251	27
Treated by camphor alone, . .	71	60	11

This gives a mortality of about 33 per cent. to the Allopathic physicians, 10 per cent. to the Homœopathic physi-

* Dudgeon's Pamphlet on Cholera.

cians, and 15 per cent. to the remedy which we suppose was given without any medical attendant, but which is Homœopathic to the first stage of the disease. The facts we here state rest on as good authority as any historical statements can; and if any one contemptuously rejects them, he must be prepared to give up all faith in history.

We now come to our own results in Edinburgh; and we may observe at the outset, that the trustworthiness of these results rests solely upon our own authority and that of our colleagues, one of whom, Dr. Sutherland, formerly of the H.E.I.C.S., was quite familiar with the disease, having had to treat it frequently in India. We cannot produce any official testimonial, for, as will be more particularly stated afterwards, we reported our cases, by the advice of Dr. Sutherland of the Board of Health, direct to London, to avoid the impertinent interference with our patients by those who came under the guise of inspectors, and made observations, and even used threats to induce persons whom we were treating to give up the Homœopathic medicine. We repeat, therefore, that if our authority for the statements we are about to make be not sufficient, we must be content with the ample evidence already adduced.

Hitherto we have left out of consideration altogether, in comparing the results of the two systems, the length of time required by each to effect a cure. We have no accurate data by which to ascertain the average duration of Allopathic treatment. Müller says, (p. 28,) "A cure was seldom effected rapidly in a few days; this happened in about one-eighth of the patients, and then it was confined to the slight cases,*

* This proves that there were *slight cases* treated in the general Allopathic hospitals, as well as in the Homœopathic. Is it not strange that the reviewer we before alluded to should have reserved the word "choleroid" exclusively for the Homœopathic hospital cases, although in the original, the term applied to both is precisely the same?

and those early treated. Yet there are examples of even severe cases having been dismissed cured in three or four days. In general, the recovery took from ten to sixteen days to complete."

The following table shows the mortality in the cases treated by us, and the average duration of the cases, including typhoid ones :—

Cases.	Recoveries.	Deaths.	Mortality.	Average time. Recoveries. Days.	Deaths. Hours.
236	179	57	$24\frac{9}{59}$	3	56

These cases occurred between the 4th October and the 1st of February. During the same period in Edinburgh, among patients of precisely the same class, and in exactly similar situation and circumstances, there occurred under Allopathic treatment—

Cases.	Recoveries.	Deaths.
876	271	546

which gives a mortality of 62 per cent. That is, if a thousand persons had been attacked, 620 would have died under the ordinary treatment, and only 380 recovered! A frightful mortality! While, if a thousand had been treated according to the Homœopathic system, 240 would have died, and 760 would have recovered. Still a great mortality.

In making our calculations, we have used the tables furnished to us by the Secretary of the Board of Health, and in the next Chapter they will be found at full length.

We think we may now consider the hypothetical position we started with as established beyond a doubt, that in various countries, in this epidemic the result has uniformly been more favourable under Homœopathic than under Allopathic treatment, and we shall therefore pass at once to a consideration of the measures employed by Homœopathic practi-

tioners to obtain these results. Before going into a minute criticism of the individual remedies, we shall state the general measures which we have found of service in treating patients affected with cholera, and then describe the medicines proper to be used in each of the stages of the disease.

Beyond the administration of the specific medicine, the first stage requires no peculiar management, except that quiet and abstinence be strictly enjoined. In the second stage, however, it is advisable to adopt auxiliary measures to aid the struggle of the restorative powers of the system. The object of treatment is to induce a *slow, steady reaction.* Let this be borne in mind. Too rapid a reaction is dangerous, and frequently terminates the patient's life suddenly, or induces the consecutive fever. From experience, we should recommend the following steps: let there be a general warmth in the apartment, by means of a fire, if the weather be cold; let the patient be covered with two or three blankets, not more; let bottles of hot water be put at his feet and sides, if the body is cold; if there are cramps, gentle and continual stroking of the affected parts gives relief; the intense thirst must be allayed by frequent moderate draughts of cold water. In some cases we tried large draughts of hot water, but we cannot report very favourably on the result. There is no objection to their trial, however. They were recommended as conducing to supply the want of animal heat. Neither can we recommend embrocations of any kind, whether camphor or turpentine. It is very doubtful if they do any good, and they probably interfere with the action of the medicines. Another thing of great importance to attend to is, that the patient *abstain from all food.* Not unfrequently, when the reaction sets in, there is a craving appetite; and as everything seems going on favourably, the physician is apt to indulge the patient's desire for something to eat. In repeated

instances we have seen sudden relapse follow upon eating; and, in our opinion, it is of the greatest consequence to give no food at all, nothing but cold water till the second and third stages of the disease be past. They seldom last above forty-eight hours, and the patient runs no risk from being kept upon a water diet for that time; and after the recovery has begun, the most extreme care is necessary in diet. Nothing but arrow-root, sago, very well boiled rice, and such like things—and even these in very small quantities—ought to be given. A person affected with cholera requires unremitting attention till he is convalescent. He should be seen every few hours, and the most rigid cleanliness of bed and person enforced, when possible. There is no disease that exacts so much care; and even if this care fail to prolong life, at all events it mitigates the sufferings of the most painful and terrible death. Let it be remembered that the invasion is very sudden, and the course of the disease is frightfully rapid, and that unless the physician is prepared at once as to the treatment he is to adopt, he will only bewilder the agitated family into which he enters. He must make up his mind to find all remedies fail, and to be prepared to assist in making the approach of death less afflicting than it would be without him; and let him remember, that throughout the whole transition from the flush of vigorous life to its cold termination, the patient's mind will be as clear and calm as it was in health. Everything he does and says will be observed, and have its influence.

Beyond the general directions we have given, there is nothing we can add, except that much depends upon the presence of mind and good sense of the individual practitioner. Each case has its peculiar features, and requires a management of its own; and the most experienced and self-possessed will often find himself embarrassed, and all his

efforts paralyzed by some unforeseen and untoward occurrence.

The remedy for the first stage of cholera is *Camphor*. This was discovered by Hahnemann; and in the future annals of science it will be mentioned as one of its brightest achievements. It is a triumph over the subtlest force of matter by the still subtler power of mind; and it seems to have required that clear insight into the essential relation of things, by the possession of which the man of genius is distinguished from the man of industry and talent alone.*

As soon as the cholera invaded Europe, the Homœopathic practitioners began to prepare their weapons for the dread encounter; and the medicines they recommended and used have all proved useful in the disease. But they groped about in vain for *the remedy* for the first stage. In the volume of the "Archiv. für die Homœopathie," for 1831, there is a very able paper by Dr. Preu of Nüremberg, proving how closely the symptoms of arsenic and veratrum resemble those of cholera, and recommending their administration in the disease. Dr. Schubert of Leipzig in addition recommended ipecacuanha and chamomilla. All of these are good in certain stages, but as yet no one had hit upon the true specific. At this time, as we have seen, the cholera was sweeping over Germany, and the believers in Homœopathy all looked to Hahnemann, like the inhabitants of Syracuse to Archimedes, for some definite instructions. Nor

* In Mr. Carlyle's fascinating work, "Hero Worship," no mention is made of the hero as a man of science. Should the author ever supply that deficiency, we take the liberty of recommending to his attention the character of Hahnemann. We venture to do so, although we are quite aware that this proposal, should it ever reach him, would suggest nothing but the ridiculous to his mind, to be expressed by a thousand ludicrous similitudes and illustrations.

had they long to wait. On the 10th of September 1831, he wrote a letter which was published by the editors of the Archiv., not suggesting a variety of medicines, which would most likely prove suitable, but stating in the simplest and most emphatic way what was the sole remedy at the beginning of the disease. "Every one," he says, "the instant any of his friends take ill of the cholera, must immediately treat them himself with *camphor*, and not wait for medical aid, which even if it were good would generally come too late. * * * In the first stage camphor gives rapid relief, but the patient's friends must themselves employ it, as the stage soon ends either in death or in the second stage, which is more difficult to be cured, and not with camphor. In the first stage, accordingly, the patient must get as often as possible, at least every five minutes, a drop of spirit of camphor, (from one ounce of camphor to twelve of spirit of wine,) on a lump of sugar, or in a spoonful of water." These orders were given by Hahnemann before he had ever seen a case of cholera, and now when the epidemic has been treated by hundreds of Homœopathic practitioners, there is nothing in them to change and nothing to them to add; they exhausted the subject. Hahnemann not only instantly saw the right remedy, but the right dose. This was from no modification of his principles to meet the cholera. In the preface to camphor in the Reine Arzneimittellehre, published in 1820, (if we mistake not, the second edition is 1825,) Hahnemann recommends a grain of camphor, dissolved in eight grains of alcohol, to be diffused through 400 grains of luke-warm water, and does not speak of any further dilution, but says that it should be administered in very frequently repeated doses. He says it is useful as a palliative in a form of influenza, which is endemic in Siberia, and spread over Europe at one time.

It is important to bring into view that Hahnemann before-

hand, upon the principles he discovered and taught, recommended large doses of camphor in the treatment of cholera, and, according to the same principles, small doses of other medicines in this and other diseases. We cannot help thinking, that if those who are in the habit of systematically reviling the name of Hahnemann really knew how much good sense, independently of all their other qualities, there is in his writings, they might be led to pause before committing themselves against him any further; and we are glad there is a prospect of obtaining access to his lesser writings through a translation which we can venture to guarantee as accurate and able, although we have not seen it.* Not only would the avowed foes of Homœopathy learn much by studying his writings, but we are of opinion that many of his followers, who are now seeking to enlarge Hahnemann, have no just idea of his real limits, and if instead of making against him, to whom we owe everything, the accusation of bigotry, they were with the meekness of true wisdom to study and ponder his works, they would delay their censure, and admit that when their experience amounted to a hundredth part of his, it would be time enough to dogmatize. The dogmatism of genius, by which the lives of thousands are saved, is a very different thing from the dogmatism of the neophyte, who must understand the process by which the preserver of life attains his conclusions, before he will admit them to be true.

Admitting the great law of healing to be, that "like cures like," now that we know camphor to be the remedy for cholera, we are only surprised that it should have required Hahnemann to discover the fact. For nothing can be more similar than the effects of camphor and the premonitory

* Hahnemann's Lesser Writings, translated by Dr. R. Dudgeon. Headland, London.

symptoms of cholera. Professor Jörg of Leipzig undertook a series of experiments to disprove Homœopathy.* The following are the effects he describes as resulting from camphor. We translate them from the condensed notice by Wibmer.†

Jörg, after taking half a grain of camphor, felt a sense of heat in the stomach; during the night, severe pain in the region of the solar plexus (bauch-ganglion.) The next day he had a dull headach; a whole grain caused heat of stomach; after two hours' perspiration, a quick pulse; thirst; rush of blood to the head. In the afternoon, shaking of the hands for half an hour. In the evening, pressive pain about the solar plexus. A grain and a half caused warmth; perspiration. In the evening, again severe pressive pain in the solar plexus, which extended upwards to the lungs and caused cough. The pulse was accelerated ten beats, and the night was uncomfortable. In the morning, there was a dull sensation in the abdominal region, and torpidity of the colon. Two grains caused warmth, perspiration, eructation, griping, enuresis, inclination to stool. In the evening, again pain in the plexus, slight thirst, and a restless night.

The observations of Jörg are fully confirmed by various experimenters. Among the morbid phenomena observed in the bodies of animals poisoned by camphor, is one of especial interest to us, which is, that the heart was no longer contractile, although examined immediately after death.‡ The operation of camphor seems even to throw light upon the pathology of cholera. It seems to act through the medium of the pneumogastric nerves upon the solar plexus, the

* See a Review in the British Journal of Homœopathy, vol. iii. of the Writings of Jörg.

† Die Wirkung der Arzneimittel und Gifte an gesunden thierischen Körper. Band 3d. München, 1837.

‡ Christison on Poisons, 4th edition, p 910.

lungs, heart, and intestines, exactly as we have suggested, as the probable action of the proximate causes of cholera.

All that remains now to be done is to give the symptoms of camphor, as observed by Hahnemann, which vindicate his selection of it for the cure of cholera.

General symptoms.—Excessive weakness; languor; and heaviness of the whole body; uncommon failing of strength; uneasiness; uncomfortableness in the whole body; he tosses about in his bed; painful sensitiveness to the least touch; difficult motion of the limbs; spasms; convulsions; cramps; he rubs his forehead, chest, and other parts; knows not how to describe his feelings; he leans against something; his senses vanish; he glides and falls down; the limbs being rigid and extended; the shoulders drawn backwards; the arms being a little curved in the beginning of the paroxysms; the hands bent towards the extensor surface of the arm, and the fingers being somewhat clenched and set apart from one another; afterwards parts of the body are stretched and stiff, with head bent sideways; the lower jaw rigid and wide open; the lips drawn inwards; the teeth clenched; eyes closed, with unceasing distortions of the muscles of the face; cold all over, and breathless for a quarter of an hour; the tetanic fit, with loss of consciousness, and vomiting, is followed by a complete inability to recollect, as if he had no memory; frequent fits of vertigo; fainting fits; foaming at the mouth; coldness of the body; trembling; confusion of ideas; delirium.

Skin.—Pale, withered, shrivelled skin; heat of skin; bluish and cold; with coldness all over the body.

Sleep.—Insomnia; strong desire to sleep; yawning and drowsiness.

Fever.—Shuddering; chilliness, and gooseflesh over the whole body; chills and chattering of the teeth; coldness of

the body, with paleness; copious cold sweat; full quick pulse; small hard pulse, becoming more and more slow; slower pulse; weak, small pulse.

Moral symptoms.—Stupefaction of the senses, resembling a swoon; insensibility; loss of consciousness; great anguish; confusion of ideas; delirium.

Head.—Vertigo; headach; throbbing pressure in the temples.

Eyes.—Blue rings round the eyes; balls of the eyes turned upwards; staring; inflamed eyes; obscuration of sight.

Ears.—Noises in the ears.

Face.—Pale countenance; countenance at first pale, with eyes closed, but afterwards staring and open; the eyes looking upwards; spasmodic contortion of the facial muscles.

Throat.—Violent burning in the palate, down the œsophagus, causing a desire for drink, but remaining in spite of drinking; soreness on swallowing.

Appetite.—Excessive thirst.

Stomach.—Nausea; inclination to vomit, followed by attacks of vertigo; cold sweat, especially on the face at the commencement of vomiting; bilious vomiting streaked with blood; pain in the stomach; violent pressure in the pit of the stomach; cooling sensation, especially in the pit of the stomach; burning in the stomach.

Abdomen.—Trouble from flatulence; cold feeling in the epigastrium and hypogastrium; burning in epigastrium and hypogastrium; cramps in abdomen.

Stool.—Constipation; involuntary diarrhœa; desire for stool; passing but little, followed by an urgent desire, and a still less discharge of fæces.

Urine.—Painful micturition; burning of the urine during emission.

Larynx.—Roughness of voice.

Chest.—The breathing is almost stopped; oppression of the chest; pressure at the top of the sternum as from a load; oppressed, anxious, panting breathing; difficult, sluggish respiration.

Trunk.—Painful stitches in back; tensive pain in the muscles of the nape of the neck, increased by movement.

Arms.—Tearings in the arm; stitches in the forearm.

Legs.—Tearing in the thighs; tearing cramp-pain in the dorsum of the foot, along the outer surface of the calf to the thighs; difficult motion and weariness of limbs; cramps in the calves of the legs.

In conclusion, we may observe that there is the most perfect unanimity among all Homœopathic practitioners as to the efficacy of camphor in curing the first stage of cholera, and the practice of administering this medicine was adopted in the general hospitals of Petersburgh. In Glasgow, also, when the cholera prevailed, "homœopathic camphor" was extensively sold by the ordinary druggists, and the ordinary practitioners are said to have prescribed it in pills.

The contrast between the opium and brandy recommended by the Board of Health, and the camphor recommended by Hahnemann, is as great as the attention with which the two are likely to be received in this country. Camphor is a certain, direct, and harmless cure of the first stage of cholera. Opium and brandy are narcotics; uncertain in their beneficial operation, certain only in their deleterious action. It is not even pretended that they can cure cholera, but only that sometimes they stop something which sometimes precedes cholera.

It is our firm belief, from all we have seen and heard, that camphor is an almost infallible remedy for cholera, if given at the very outset of the attack. Every household should get a bottle of tincture of camphor to administer whenever

the slightest symptoms of the disease appear. It is useless if not given within the first few hours. If the Government would appoint a Commission to inquire into this matter, we are confident that the evidence adduced would convince it of the propriety of making a similar recommendation. But of this we have little hopes.

We have spoken of *the cure* of the first stage of cholera, and the means by which it may be effected; we now come to speak of *the treatment* of the second and third stages, for we cannot separate these two in a therapeutic point of view. The transition is immense. The first stage may be cured by any person who knows the one proper medicine to give; the next stages require skilful treatment; and even in the hands of the most judicious and attentive the issue is often fatal. The difference between the two is like that between the suppression of an evil thought and the undoing of a wicked deed. The pathology of the disease would itself have led us to this conclusion, independently of experience; for it is quite manifest that a disease in which there is a disorganization of the blood must be difficult to manage. The stream of life, which supplies all the materials for the growth and maintenance of the body, is poisoned, and we cannot remove the poison, therefore we cannot cure cholera when it is fully developed. But we can do much to neutralize the bad effects of this poison upon the system, and thus we can treat the disease much more successfully than Allopathic practitioners. A patient ill of cholera may be regarded as a person poisoned; if the poison be very virulent, he dies; if not, he may recover, if we antidote its physiological effects upon the animal economy by appropriate remedies.

We feel the more called on to make these preliminary observations from remembering our utter despair, when we first treated the disease, at finding, despite of all our boasted

remedies, every patient died. This is a common experience, and we would warn our brethren to be prepared to find all their efforts baffled. By and bye, when the cases were not so rapid, and the poison apparently not so virulent *quoad* the persons, the number of our recoveries rapidly increased. So we would say to others, "Go on treating all you can, and be not disheartened although they all die; things will mend if you persevere." We propose now to give a detail of the various medicines which have been employed in treating the second and third stages of Cholera; and we shall give an analysis of the symptoms of each medicine which resembles in its operation those of the disease, and practical commentaries upon its administration. As we look upon this as the most important and incomplete part of this work, we trust that those who may acquire experience in the treatment of the disease may direct their special attention to its correction and completion.

Arsenic is the remedy in which we have far the most faith, after the period for the administration of camphor is passed.

An attentive study of the operation of arsenic fully warrants this confidence in its curative power in cholera. It evidently has a deep action on the vitality of the body, independently altogether of its local irritant effect, and this action, like that of the cholera poison, shows itself in many ways, but the most characteristic symptom is simply death. The following quotation from Dr. Christison's exhaustive treatise upon poisons will bring this out better than anything else we can collect, and it is confirmed by the observations of Orfila:—

"In the Medical and Philosophical Journal of New York is related the case of a druggist, who swallowed an ounce of powdered arsenic at once, and died in eight hours, after two

or three fits of vomiting, with slight pain and heat in the stomach.—A similar case has been related by Metzger. A young woman died in a few hours, after suffering from trivial diarrhœa, pain in the stomach, and strangury; her death was immediately preceded by slight convulsions and fits of suffocation; and on dissection the stomach and intestines were found quite healthy. Half an ounce of arsenic was found in the stomach.—A third case, similar in its particulars to the two preceding, was submitted to me for investigation by the Sheriff of this county in 1825. The subject, a girl fourteen years of age, took about ninety grains, and died in five hours, having vomited once or twice, complained of some little pain in the belly, and been affected towards the close with great faintness and weakness. The stomach and intestines were healthy.—A fourth case, allied to these, is succinctly told in the Medical and Physical Journal. The person expired in five hours, and vomiting never occurred, even though emetics were given.—A fifth has been related by M. Gérard of Beauvais. The subject was a man so addicted to drinking, that his daily allowance was a pint of brandy. When first seen, there was so much tranquillity, that doubts were entertained whether arsenic had really been swallowed; but at length he was discovered actually chewing it. This state continued for nearly five hours, when some vomiting ensued; coldness of the extremities and spasmodic flexion of the legs soon followed; and in a few minutes more he expired.—A sixth and very singular case of the same kind has been described by Orfila. The individual having swallowed three drachms at eight in the morning, went about for two hours bidding adieu to his friends, and telling what he had done. He was then prevailed on to take emetics and diluents, which caused free, easy vomiting. He suffered very little till one, when he be-

came affected with constricting pain and burning in the stomach, feeble pulse, cold sweats, and cadaverous expression, under which symptoms he died four hours later. Orfila justly designates this case as the most extraordinary instance of poisoning with arsenic that has come under his notice.—A seventh is related by Mr. Holland of Manchester, where death took place in the course of eight or nine hours, and the symptoms were at first some vomiting, afterwards little else but faintness, sickness, a sullen expression, and a general appearance which led those around to suppose the individual intoxicated.—Professor Chaussier has described a still more striking case than any yet mentioned. A stout middle-aged man swallowed a large quantity of arsenic in fragments, and died in a few hours. He experienced nothing but great feebleness and frequent tendency to fainting. The stomach and intestines were not in the slightest degree affected during life; and no morbid appearance could be discovered in them after death.—A similar instance, not less remarkable, has been communicated to me by Mr. Macaulay of Leicester, where the individual died with narcotic symptoms only within two hours after taking nearly a quarter of a pound of arsenic.—Another, fatal in four hours, has been described by Mr. Wright, where the symptoms were vomiting under the use of emetics, great exhaustion, feeble hurried pulse, cold sweating, drowsiness, and finally stupor. In this case the quantity of arsenic taken was about an ounce.—Another of the same nature is recorded by Morgagni. An old woman stole and ate a cake, which had been poisoned with arsenic for rats. She died in twelve hours, suffering, says Morgagni, rather from excessive prostration of strength than from pain or convulsions.—The following case related by M. Laborde is most remarkable in its circumstances. A young woman was caught in the act of swallowing little

fragments of arsenic, and it afterwards appeared that she had been employed most of the day in literally cracking and chewing lumps of it. When the physician first saw her, the countenance expressed chagrin and melancholy, but not suffering. After being forced to drink she vomited a good deal, but without uneasiness. Two hours afterwards her countenance was anxious; but she did not make any complaint, and very soon resumed her tranquillity. Five hours after the last portions of the poison were taken she became drowsy, then remained perfectly calm for four hours more, and at length, on trying to sit up in bed, complained of slight pain in the stomach, and expired without agony. A clot of blood was found in the stomach. Dr. Platner of Pavia describes a case, fatal probably in five hours, where the symptoms were a tranquil, melancholic expression, great coldness, paleness of the features, slow languid pulse, retarded respiration, and suppression of urine, but no pain or swelling of the belly, and no diarrhœa till near death, when there was one copious fluid evacuation. Lastly, Dr. Choulant has related the case of an elderly female who got a thimbleful of arsenic in soup, and died in eleven hours, affected with occasional, easy vomiting, uneasiness, thirst, and undefinable uneasiness in the chest, but without pain of any kind, or any other complaint.

"The cases, of which an abstract has here been given, will, it is apprehended, be sufficient to correct the erroneous impression of many,—that arsenic, when it proves fatal, always produces violent and well-marked symptoms. It will of course be understood that cases of the present kind pass by insensible shades into those of the first class,—the following for example, being intermediate between the two: A young man had frequent vomiting and diarrhœa, which were supposed to depend on indigestion merely, as the

countenance was calm, without any appearance of suffering, the appetite tolerable, and the abdomen quite free of tenderness. The pulse, however, quickly sunk, the voice failed, and death took place in eleven hours; and on dissection, about twenty grains of arsenic were found in the stomach, with strong signs of inflammation.—In a case communicated to me by a former pupil, Mr. Adams of Glasgow—that of a woman who died five hours after taking six drachms of arsenic, there was some vomiting not long after she swallowed it; but subsequently she presented no prominent symptoms except a ghastly expression, redness of the eyes, a fluttering pulse, and extreme prostration, until within half an hour before death, when the action of an emetic and the stomach-pump was followed by severe burning pain."*

The last case is so like one of cholera, that we are sure if the epidemic were prevailing it would have passed for a severe seizure of the disease.

We look upon arsenic as a forlorn hope in those very bad cases where there are hardly any symptoms present except coldness, lividity, thirst, a fluttering pulse, or no pulse, and great apprehension (alas! often too well founded†) of immediate death. In this class of cases, of which several will be found among those we have published, we should be inclined, had we to treat them over again, to give nothing but arsenic, and that, too, in the largest dose we ever employ. We should give a drop of the first centesimal dilution every half-hour, and no other medicine. The general experience of Homœopathic practitioners is in favour of the great value of arsenic in the cholera.

The mode of administration must depend upon the nature of the case. If there is not constant vomiting, we should

* Christison on Poisons, pp. 308-311.

† "Je suis un homme perdu," were the last words of Marshal Bugeaud.

advise a drop of the tincture of arsenic to be mixed with a tea-cupful of iced water, and given as a dose every half-hour. This relieves the thirst, and it is probable that it will be more effectual than when given in a smaller quantity of water. If, on the other hand, nothing will remain on the stomach, then a drop of the tincture may be put upon the tongue. We would advise its continued administration throughout the whole period of the collapse, unless some special and urgent symptoms, indicating other medicines, supervene.

Of the whole number of cases treated at the Edinburgh Dispensary, seventy-five were treated with camphor and arsenic alone; of these, fifty-six recovered, and nineteen died.

We shall now give the symptoms of arsenic as detailed by Hahnemann, from whose pages Dr. Christison, who is not supposed to have any partiality to Homœopathy, selects his description of the effects of the poison. This is a remarkable tribute, considering how many have written about the effects of arsenic, both before and after Hahnemann had published his treatise, "Uber die Arsenic—Vergiftung;" and how perfectly able the erudite Professor was to pronounce a sound judgment *upon this point.*

The following symptoms are extracted from Hahnemann, and we have put in italics those which we consider most characteristic of the true features of cholera:—

General symptoms.—General rapid sinking of strength; excessive debility; weakness, obliging him to lie down, with inability to leave the bed; *vertigo when rising from the recumbent posture;* falls down suddenly on rising with vertigo; restlessness; weakness, with dropping of the lower jaw; sunken, extinct eyes, and open mouth; pains in the whole body; excessive, intolerable spasms; tetanic spasms; convulsions, with frightful contortions of the limbs; trembling of the limbs; stiffness and inability of the limbs, with vio-

lent tearing pains ; burning, corrosive pains ; the pains seem intolerable, drive one to despair and frenzy ; shuddering coldness ; heat in the face and body ; anguish ; fainting fits ; grinding of the teeth ; loss of consciousness.

Skin.—Coldness ; dry and cold ; *covered with cold, clammy sweat.*

Sleep.—Sleeplessness, with uneasiness and tossing about ; starting during sleep as in a fright.

Fever.—Coldness of the limbs ; *general coldness, with parchment-like dryness of the skin, or profuse sweat ;* chilliness ; violent ; with shaking ; internal heat ; *cold, clammy sweat ;* pulse quick, small, rather hard ; rapid, feeble, intermittent ; *small, feeble, frequent ; intermittent ; suppressed.*

Moral symptoms.—Melancholy, sadness ; violent anguish ; *anguish of death ;* anguish, with fainting fits ; driving him out of his bed ; with tremor ; cold sweat on the face, or tearing in the abdomen ; *he despairs of his life ; great fear of death ;* delirium ; loss of consciousness.

Head.—Beating pain in the head ; humming in ears ; nausea ; inclination to vomit when raising oneself in bed.

Eyes.—Inflammation of eyes ; dull staring eyes, without lustre, turned upwards ; almost complete blindness ; *dull eyes surrounded with blue circles.*

Ears.—Humming in the ears ; roaring in the ears, particularly during the paroxysms of pain ; deafness.

Face.—*Sunken countenance ; pale, death-coloured face ;* yellow ; *livid ; bluish, sickly colour of the face ; lead-coloured ;* disfigured ; *deathlike ;* distorted features.

Teeth.—Spasmodic grinding of the teeth.

Mouth.—Blackish colour round the mouth ; *bluish lips ;* tongue bluish or white ; great dryness of the mouth ; fœtid smell of the mouth ; loss of speech.

Throat.—Burning in the pharynx ; painful, difficult de-

glutition ; *the throat feels very dry, with constant desire to drink.*

Appetite.—Violent, unquenchable, burning, suffocative thirst, obliging him to drink frequently, although little at a time ; *sdeire for cold water ; loss of appetite, with violent thirst.*

Stomach.—Frequent hiccough ; nausea, with great anguish ; empty retching ; vomiting ; vomiting of everything he eats or drinks ; excessive vomiting of what he drinks with great exertions ; vomiting of yellow, green mucus, and bile ; *vomiting of fluid, bluish, dingy-yellow substances, followed by great exhaustion ;* of brownish or blackish substances, with great exertions and aggravations of the pains in the stomach, sometimes mixed with blood ; vomiting of blood ; of blood and mucus ; bloody discharges by the mouth and rectum ; *vomiting, with diarrhœa ;* during the vomiting, violent pains in the stomach ; internal burning heat and thirst ; soreness in the abdomen ; violent screams ; apprehension of death ; excessive pain in the stomach and pit of the stomach ; pressure at the stomach ; burning in the pit of the stomach ; *spasmodic pains in the stomach ; excessive with thirst ;* with violent colic, diarrhœa, and fainting fits ; drawing in the stomach ; heat and burning in the stomach and pit of the stomach, with pain and oppression ; in the chest and stomach, with tightness and oppression.

Abdomen.—Borborygmus ; *excessive pains in the whole abdomen, with vomiting, and diarrhœa ; in the hypogastrium ;* pains, accompanied with great anguish, lamentations, tossing about ; *internal restlessness, which does not allow one to lie still ; despair of one's life ;* spasmodic pains in abdomen ; *tearing in abdomen, with icy coldness of hands and feet, and cold sweat on face ;* cold and chilly sensation in the abdomen ; burning in the abdomen, with heat and thirst ; swelling of the abdomen.

Fæces.—Constipation; ineffectual urging; *tenesmus, with burning and pressing in the anus and rectum;* unperceived involuntary discharge of fæces; diarrhœa; *violent with frequent discharges; with vomiting; with great weakness; with thirst;* evacuations, burning, *yellow, watery, dark-green, greenish, dark-brown;* bloody evacuations, with vomiting and excessive colic.

Urine.—Frequent urging to urinate; *diminished discharge of urine with burning; suppression of the secretion of urine.*

Larynx.—Hoarseness; unequal voice; at times strong, *at times feeble.*

Chest.—Anxious and oppressive shortness of breath; painful breathing; moaning breathing; *oppression; laboured breathing;* arrest of breathing; from pain in the pit of the stomach; from anguish and pain in the abdomen; *suffocative oppression,* and arrest of breathing; fœtid breath; *palpitation of the heart.*

Trunk.—Pains in the back, with uneasiness and anxiety; contortion of the muscles.

Arms.—Drawing and tearing in the arms; *the hands are stiff and insensible; cramp in the hand; coldness of the hands; painful cramp in the fingers; rigidity of the fingers; drawing, darting, and tearing from the fingers to the shoulders; sickly colour of the nails.*

Legs.—Drawing, tearing in the hips; violent pain in the limbs; *cramp in the thighs, calves, and toes; cramp in the calf; hardness in the calf as if pressed flat, with coldness;* stiffness and lameness of the leg.

The medicine next in order to arsenic, both from its chemical and physiological affinities, is *Arseniuretted Hydrogen.* We do not think it is necessary to give a detail of the

symptoms of this substance, and prefer quoting the following observations from Dr. Christison's work :—

"Analogous to the effects of inhaling oxide of arsenic are those lately observed from the incautious inhalation of arseniuretted-hydrogen gas. Gehlen the chemist died of this accident; but no particular account has been published of the symptoms he suffered. Two cases, however, have been minutely detailed within a few years. In one of these, which has been related by Dr. Schlinder of Greifensberg, the individual inhaled in forty minutes about half a cubic inch of the gas, which is equivalent to about an eighth of a grain of arsenic. In three hours he became affected with giddiness; and soon afterwards with an uneasy sense of pressure in the region of the kidney, passing gradually into acute pain there and upwards along the back. General shivering ensued, with coldness of the extremities, and gouty-like pains in the knees, shoulders, and elbows. The hands and lower half of the forearms, the feet and legs nearly to the knees, the nose and region of the eyebrows, felt as if quite dead, but without any diminution of muscular power. There was also acute pain in the stomach and belly generally, painful eructation of gas, and occasional vomiting of bitter, greenish-yellow mucus. The most tormenting symptom, however, was the pain in the kidneys, which soon became attended with constant desire to pass water, and the discharge of deep reddish-brown urine mixed with clots of blood. The whole expression of the countenance was altered, the skin becoming dark-brown, and the eyeballs sunk, yellow, and surrounded by a broad livid ring. Warm drink brought out a copious sweat, and removed the sense of numbness; but next day there was little change otherwise in the symptoms, except that the urine was no longer mixed with clots, and that the hair on the benumbed parts had become white. On the third day

the pains had abated, and the urine became clear; but there was hiccough, an excited state of the mind, and a feeling as if a great stone lay in the lower belly. In seven days, he was much better. In the third week, the whole glans and prepuce became covered with little pustules, which were followed by small ulcers. It was not till the close of the seventh week that he recovered completely.—Dr. O'Reilly has related the following case, which arose from the inhalation of hydrogen gas impregnated with arseniuretted-hydrogen, in consequence of the sulphuric acid used for dissolving zinc having contained arsenic. Mr. Brittan, a Dublin chemist, wishing to ascertain the effects of hydrogen on the body, proceeded to inhale 150 cubic inches of it. Immediately after the second inhalation, he was seized with confusion, faintness, giddiness, and shivering, and passed a stool, as well as two ounces of bloody urine, but without any pain. Pains in the limbs followed, and in two hours frequent vomiting and dull pain in the stomach. The pulse at this time was 90, the skin cold, and the voice feeble. Ammonia, laudanum, and emollient clysters gave him little relief. During the subsequent night there was frequent vomiting and no urine; the face became copper-coloured, and the rest of the body greenish; there was tenderness of the epigastrium and hiccough; but he was free of fever. On the third day, there was diarrhœa, and still no urine; but the jaundice had disappeared. On the fourth, the breath was ammoniacal, and somnolency had set in. On the fifth, the skin became again deeply jaundiced, and the face was œdematous; no urine had yet been discharged, and the bladder, examined with the catheter, was found empty. On the evening of the seventh day, he expired. On examination of the body, two pints of red serum were found in the pleural cavities; the lungs were sound, the heart pale and flaccid, the liver indigo-

blue, the gall-bladder distended with bile, the kidneys also indigo-blue, the stomach empty, and its villous coat brittle, with here and there inflamed-like spots on it, the bladder empty, the brain bloodless, the cellular tissue generally anasarcous. Arsenic was detected in the pleural serum. By an approximate calculation it was supposed that the hydrogen this gentleman inhaled had contained the equivalent arsenic of twelve grains of the oxide."*

We tried it only in one case, which, although a very bad one, recovered. We should be inclined to use it frequently in cases of great collapse, particularly when the vomiting prevented any medicine remaining in the stomach.

The introduction of ether and chloroform opens an important consideration as to the propriety of giving medicines by inhalation. Many and obvious advantages attend this mode of administration. One of the most important is the vast surface upon which the remedy may act. In such a rapid and powerful disease as the cholera, it is of the utmost consequence to produce a prompt antagonistic effect. This may be done by applying the specific in the form of vapour to the lining membrane of the lungs, better than by any other means. There are certain mechanical difficulties attending the process which we doubt not might easily be overcome by a little ingenuity.

Perhaps the best way of giving it would be to diffuse it through water; moisten a sponge with this arseniuretted water, and hold it near the patient's mouth and nose, so that he might inhale the disengaged gas, which would be considerably diluted. We must recollect, however, that this substance is a most virulent poison, and the greatest caution is necessary in using it.

Veratrum album has a great and traditional celebrity for

* Christison, pp. 326-328.

the cure of cholera. The following case is recorded in the works ascribed to Hippocrates:—"A young Athenian affected with cholera evacuated upwards and downwards with much suffering, nothing could arrest the vomiting or alvine evacuations. His voice failed, he could not stir from bed. His eyes were lustreless and sunken. He had convulsions of the lower extremities from the abdomen downwards. He had hiccough, and the stools were more copious than the vomitings. He took veratrum in lentil juice,"* and recovered. Hippocrates was an unconscious homœopathist. Had he lived after Hahnemann, he would have gloried in a profession of its principles, and utterly disavowed those who now call themselves by his name. Just as Abraham would have been a Christian had he lived after the introduction of Christianity, and disowned as not his real children those who now bear his name, and prefer the exaltation of a race to the salvation of a world.

Veratrum was the medicine in highest repute during the former epidemic. Fleischmann gives it usually alternately with arsenicum. And in the prevalence of Cholera in Petersburgh, Müller mentions that it was the favourite remedy in the Homœopathic Hospital there. He says that it was given in tincture; but we rather suspect his accuracy on this point, for the reason he alleges for its administration is its supposed action upon the solar plexus of nerves. Such a hypothetical reason for the selection of medicine could have no place in the mind of a disciple of Hahnemann. We imagine that observing its utility he explained it in this way, and supposed that it was by this road we were led to it. However, nothing can be clearer than the Homœopathicity of veratrum for cholera, in general; we doubt whether it be so perfectly suited to the present epidemic cholera as arsenicum; at least as far as our

* De Morb. Popul., lib. v., § iv. Quoted by Dudgeon.

experience goes, we feel at present inclined to trust it more in cases of violent vomiting and purging, and all the other prominent phenomena of cholera, but which are destitute of what we should call the essential physiognomy of the disease. Such cases will pass for cholera in all reports, Homœopathic and Allopathic, and they will be cured; but to a practised eye there is something about them different from fatal cases, at the very outset. The disease seems to be going inwards, advancing towards the seat of life; not coming outwards from it. That they are often fatal, there is no doubt; and that veratrum cures them, we have no doubt either; but still veratrum is not sufficient in the worst type of the disease: and the reason of its great exaltation is, that it cures so many curable cases very like true cholera. We are by no means prepared to say that it is not of great service in the treatment of cholera, but believe that its utility has been somewhat overrated. We have found it most useful in cases where there was violent purging and vomiting, without that sudden deadly collapse which we characterized as the indication for arsenicum. Whether it is advisable to give it alternately with arsenic, is a difficult question, on which we feel some hesitation in venturing. We should be rather inclined to stop the arsenic for a while, and give veratrum in pretty large doses; the 1st, 2d, or 3d dilution; pretty frequently for some little time, and then return to the arsenic. However, we should be sorry to dogmatize on this matter, for we are far from having come to a clear principle of guidance in it. The only vehicle for its administration is water, and it may be given either in a large or small quantity, according to circumstances. When there was great insensibility and dryness of the mouth and lips, so that swallowing was difficult, we have dropped it into the throat by a quill used as a pipette. Before detailing the symptoms of veratrum as

recorded in Hahnemann, which justify its use in cholera, we shall give a very good example of the poisonous effects of the drug. We may mention in passing, that it is one of the oldest poisons, and is supposed to have been used by the Gauls and other nations in their gallant warfare with the Romans. So that to it Horace probably alludes in his famous ode, in which he introduces the "venenatis gravida sagittis." This rests on the authority of Pliny, Celsus, and Dioscorides.*

The following case, quoted by Orfila, is related by Vicat :† —"A tailor, his wife, children, and workman, took some soup in which the root of white hellebore had been put instead of pepper. Shortly after, these persons were seized with a general coldness, and their bodies became covered with an icy sweat; their debility was extreme; they were almost in a state of insensibility; and their pulse could scarcely be perceived. At the expiration of two hours, the eldest child, who was not four years of age, began to vomit copiously, but with considerable straining. The rest were shortly after in the same condition." The next case is recorded by Brückmann,‡ and quoted by Wibmer :—"A woman, sixty years of age, had taken some powdered hellebore-root by mistake. After an hour had elapsed, she was affected with violent burning in the throat and stomach; nausea; she began to retch green mucus; she had dysuria (Harnzwang); stiffness and coldness of the whole body; the pulse was imperceptible; the perspiration occasionally interrupted; often spasmodic; the face pale; the pupils enlarged; sensibility and consciousness were absent."

The following catalogue of symptoms are extracted from Hahnemann's proving, and we have marked those we wish to direct attention to as we did the symptoms of arsenic :—

* Wibmer, op. cit., v. Band S. 406.

† Histoire des plantes Vénéneuses de la Suisse, p. 166.

‡ Horn's Archiv., 1825, i. 477.

General symptoms.—Excessive weakness; he falls down from weakness; sudden failing of strength; debility in all the limbs; inclines to lie down; faints at the least motion; pain in the muscular parts of the body, composed of pressure and a bruised feeling; shootings in the body here and there; stiffness of the limbs; cramp-like drawing above the joints; convulsions in the limbs, with profuse sweat; afterwards headach, vertigo, and a good deal of drinking; spasms; convulsions; epileptic convulsions; trembling in all the limbs; *horrid anguish about the heart;* disposition to faint; *when rising, he is tormented by a horrid anguish; the forehead being covered with a cold sweat; nausea; vomiting; coldness of the whole body.*

Skin.—Coldness of the whole body; *with cold, clammy sweats.*

Sleep.—Drowsiness, with starting, as in a fright, preventing sleep.

Fever.—Shuddering; cold chilliness in the skin; coldness of the whole body; *the whole body feels cold to him and others; internal cold thrill, with thirst;* chilliness in the limbs, with a drawing pain in the same; internal heat; *cold sweat all over; cold sweat all over the head and trunk; the pulse collapses; imperceptible pulse;* there is the usual number of pulsations, but the pulse is weak and almost imperceptible.

Moral symptoms.—He dreads to talk; *despair; great anguish, anxiety, and vertigo;* sensation in his whole frame as if he was going to die; however he is composed; tendency to start and fearfulness; loss of memory; excessive dizziness; loss of sense; delirium.

Head.—Headach; dizziness and humming in the forehead, with dull internal headach.

Eyes.—The eyes look faint, surrounded with blue rings;

the eyes are turned backwards, so that the whites only are seen ; loss of sight.

Ears.—Roaring in the ears.

Face.—Cold, disfigured face as of a dead person ; face pale, cold, hippocratic, wan, with the nose pointed, and a blue circle round the eyes ; bluish colour of the face.

Teeth.—Grinding of the teeth.

Mouth.—Dryness in the region of the palate and desire for water ; dry lips and dry mouth, with thirst ; *coldness of the palate ; he speaks with a low and feeble voice* ; stammering ; speechlessness.

Throat.—Burning in the throat ; dryness in the throat, which cannot be removed by drink ; drawing pain in the throat ; thirst and colic ; sensation of suffocation.

Appetite.—Unquenchable thirst, particularly for cold drinks.

Stomach.—Hiccough, continuing for a long while ; nausea; excessive desire to vomit, even to fainting ; vomiting of the ingesta ; vomiting of green mucus, afterwards of copious froth ; vomiting of a good deal of mucus, with excessive weakness ; vomiting of bile and mucus, then of blood ; violent, excessive vomiting ; feeling of weakness, with internal coldness in the region of the stomach and a slight pressure ; painful pressure and drawing round the pit of the stomach.

Abdomen.—Loud rumbling in the abdomen ; drawing pain deep in the abdomen ; distention of the abdomen ; pains in the stomach and intestines ; pinching in the abdomen, at times below, at times above the umbilicus.

Fæces.—Constipation ; *sudden, frequent, loose stools ;* discharge of acrid fæces, with tenesmus ; *excessive alvine discharges ;* frequent and violent diarrhœa ; *chilliness and shuddering, with frequent stools ;* extreme weakness during stool ; violent, bloody diarrhœa ; *the evacuations are accompanied*

with cold, profuse sweat on the forehead; burning at the anus during stool.

Urine.—Burning; *scanty.*

Chest.—Spasmodic contraction of the intercostal muscles of the left side, arresting the breathing; painful constriction of the chest; *excessive anguish affecting the breathing;* cutting pain in chest; painful and difficult breathing.

Trunk.—Pain in the loins, and tearing pain in the lower limbs.

Arms.—Painful paralytic weakness in the upper and lower limbs; *twitching in either arm; the fingers feel dead.*

Legs.—Cramp-like drawing in the gluteal muscles when standing; cramp-like drawing pain in left thigh when standing; painful heaviness of the legs; *cramp in the calves and feet; coldness in the feet.*

Copper, both in the form of *cuprum metallicum* and *cuprum aceticum*, is a very valuable remedy in cholera. The cases for which it answers best are those attended with violent spasms, and with or without copious discharges; it does not seem of much use when there is great collapse. We prefer the acetate of copper to the metallic copper, rather from a general belief in the greater certainty and rapidity of the action of soluble salts, than from any comparative experience of the efficacy of the two. If the metallic copper be given, it should be given in dry powder, and if the acetate be used, it may be given either in solution or in powder, as circumstances indicate. We have seen very marked mitigation of the cramps after its administration, and we have great confidence in recommending its frequent repetition when these are severe. A dose may be given every five or ten minutes. We have generally employed the third dilution of the acetate, and have no reason to suppose that any other dilution would have answered better.

We do not look upon cuprum as at all a specific for cholera, but as powerfully curative of one of the most distressing group of symptoms. We cannot, therefore, believe that it will be of much use as a prophylactic against the disease. Indeed, we must confess that we do not think there is sufficient evidence in favour of any prophylactic of cholera. Of course there can be no harm in wearing a plate of copper next the skin, as some have recommended ; but we are inclined to believe that the taking of medicines daily to keep off cholera may have an injurious moral effect, and predispose to the disease. It brings the subject continually before the mind, and suggests the probability of an attack. The fear of cholera goes to such a length in some persons as to deprive them of sleep and all enjoyment of life. In such cases we should recommend the use of prophylactics, but more for the purpose of calming the nervous system than of acting homœopathically in regard to cholera. If we had used any protection when attending patients in cholera, it would have been camphor. We do not think that a person surrounded with a camphor atmosphere could be affected with the disease. We believe its poisonous effects would be immediately neutralized. The following cases, reported by Dr. Beer of Vienna, are the best specimens we have met with of the poisonous effects of copper :—

" On the 1st of April of this year, at eight o'clock in the evening, I received a notice from a surgeon, that, in a certain house, several children had been attacked with violent vomiting without any known cause. A narrower examination afforded me the following particulars :—At twelve o'clock noon of the 1st of April, Anna K——n gave to three children, viz., Franz Krakowetz, aged three years, Elizabeth Fetty, eleven years, and Franz Eigenmann, four years, some confectionary, of which the children eat a portion on the spot, and, carry-

ing a portion home, gave some of it to Mary Stacker, aged eleven, and Anna Schedel, aged six years.

"The following symptoms appeared—in the three children who had eaten at dinner of the confectionary immediately after eating, and in the two who had eaten later some hours after the indulgence :—

"Unquenchable thirst, headach, and giddiness, nausea, dryness of the mouth, frequent vomiting of a fluid, partly yellow-brown, partly blackish-green, severe tormina at the region of the navel, suppression of urine, slight tension of the abdomen, which was tender on pressure, obstinate costiveness with constant tenesmus, pain in the small of the back, with cold extremities, and cold sweat. After the vomiting had somewhat subsided, nervous symptoms were superadded, of which the chief were—very severe headach, slight delirium, tearing pain in the upper extremities, and convulsive movements of the lower, particularly in the calves of the leg, great exhaustion and somnolence, which, in the case of three children, amounted to a comatose condition ; the countenance was in parts red, in parts very pale. The pulse in four of the children was very small, contracted, and slow ; only in the case of Franz Krakowetz, a plethoric boy, did I find a hard, full, quick pulse, with redness of the face and dryness of the skin. M. Stacker had six attacks of diarrhœa, and Anna Schedel one attack of vomiting of blood and mucus.

"It is not necessary to mention the chemical process by which copper, which must have existed in large quantity in the confectionary, was detected.

"The children seem all to have recovered; but one of them, three weeks after this event, was attacked by jaundice, and another of them by a tertian intermittent fever, attended with periodic diarrhœa."*

* British Journal of Homœopathy, vol. i. pp. 97, 98.

Drouard relates that twenty-one Jacobin friars were poisoned by a preparation of copper, and that "in all of them the first symptoms were severe headaches, accompanied with excessive weakness in the legs and in the whole body; dull pains over the forepart of the thighs, and, in some, cramps in the calves of the leg. Those who first felt the action of the poison had experienced besides a severe pain in the stomach, accompanied with *great anxiety of the precordia,* which is peculiar to it, and a trembling of the limbs."*

It will be seen by these cases that vomiting and purging are by no means a constant effect of copper; but pain and cramps seem to be so. We shall now give the symptoms of cuprum metallicum and cuprum aceticum, as we have done of the other medicines.

CUPRUM METALLICUM.

General symptoms.—Excessive weakness in the whole body; repeated fainting fits; uneasiness in the body; very restless; tremor in all the limbs; cramps in the limbs; convulsive movements of the limbs; general convulsions; *convulsions, with continued vomiting and violent colic;* the limbs and trunk become rigid.

Skin.—Cold sweat; contraction of the skin on the limbs.

Sleep.—Sleeplessness; one is unable to fall asleep; the sleep is full of dreams, and interrupted by frequent vomiting.

Fever.—Chilliness, especially of the hands and feet; chilliness and chattering of teeth; shuddering and chills over the whole body; *cold sweat for several hours;* moist hand; accelerated pulse; soft, slow pulse; slow pulse, twenty-four beats a minute; *weak and small pulse.*

Moral symptoms.—Melancholy, and imagines that his

* Expériences et Observations sur l'empoisonnement par l'oxyde de cuivre, &c. Par C. R. Drouard, p. 36. Quoted by Orfila, vol. i. p. 218.

death is imminent and unavoidable; anguish about the heart; restless tossing about, and constant uneasiness; his senses vanish; delirium; incoherent, delirious talk.

Head.—Attacks of vertigo; most violent headach.

Eyes.—*Sunken, deep eyes, with blue borders; red inflamed eyes;* wandering eyes; staring and sunken eyes; protruded glistening eyes; dilatation of the pupils; obscuration of sight.

Ears.—Drumming in the ears; deafness.

Face.—Paleness of the face; *bluish face, with bluish lips; changed features, full of anguish;* sad, dejected expression of the countenance; spasmodic distortion of the features.

Teeth.—Spasmodic contraction of the jaws.

Mouth.—Tongue coated with a white mucus; he lost his speech.

Throat.—Dryness of the throat, with thirst.

Appetite.—*Excessive thirst.*

Stomach.—*Frequent hiccough;* nausea immediately; violent nausea; nausea, with inclination to vomit; inclination to vomit, accompanied by spasmodic colic; vomiting; *continual vomiting;* violent vomiting from time to time; *violent vomiting, with nausea and diarrhœa;* continued vomiting, attended with the most horrid colic; excessive vomiting, accompanied by continued pain in the stomach and tenesmus; *frequent vomiting, accompanied by colic and diarrhœa resembling cholera; vomiting of water; of mucus;* of green and bitter mucus; hæmatemesis; excessive, horrid pains in the stomach and in the region of the stomach; pressure in the pit of the stomach.

Abdomen.—Pain in the abdomen, with excessive anguish; pressure from above downwards in the abdomen, as if from a stone; painful pressure in the abdomen; more violent by contact; inflation of the abdomen; hardness of the abdomen, with great painfulness to the touch; *violent spasms*

in the abdomen and in the upper and lower limbs, with piercing, torturing screams; cutting and tearing in the bowels.

Fæces.—Constipation; violent diarrhœa; bloody diarrhœa.

Urine.—Urgent desire to urinate, with emission of a small quantity of urine.

Larynx.—Hoarseness.

Chest.—The chest feels contracted; the breathing is difficult, even to suffocation; constriction of the chest; suffocative arrest of breathing; stitches in the side; palpitation of the heart.

Trunk.—Lancination across the small of the back; violent aching in the back, under the right scapula; lancinating tearing in the cervical muscles.

Arms.—Drawing pain in shoulder; shock or jerk in left upper arm; drawing pains in lower arms; *cold hands; numbness and shrivelling of the fingers.*

Legs.—Drawing, aching pain in the nates; great pain in the lower limbs; excessive weakness in the lower limbs; drawing pain in the right thigh; *cramp in the leg from the malleolus to the calf;* painful jerk or shock below the calf; *cramp in the calves;* tensive and drawing cramp; pain in the calf; drawing pain under the calf; tearing and pressure in the leg below the knee-joint; *drawing pain in the sole of the foot.*

CUPRUM ACETICUM.

General symptoms.—General muscular weakness and great languor; great restlessness; fainting turns; rigidity of the limbs and trunk; bruised and lame feeling in the small of the back and lower limbs, accompanied with tearing pains; slight convulsions; spasms and convulsions; *convulsions accompanying the constant vomiting and violent colic.*

Skin.—Icy cold, especially that of the extremities.

Sleep.—Starting during sleep.

Fever.—Feverish heat ; *Icy coldness of the body, particularly of the hands and the feet ;* cold sweat ; *pulse frequent, small, hard,* contracted ; at times regular, at others irregular.

Moral symptoms.—Tendency to start ; *great anguish ;* delirium.

Head.—Giddiness on raising the head ; painful throbbing in the temples ; violent headach, with thirst, and violent colic, or with extreme weakness.

Eyes.—The eyes are sunken, staring as if retracted into the sockets ; the whites of the eyes are slightly red.

Ears.—Singing and buzzing in the ears ; deafness.

Face.—Expression of sadness ; despondency ; excessive anguish and intense pain in the face ; cool face ; spasmodic distortion of the face.

Mouth.—Greyish tongue ; moist tongue.

Throat.—Difficult deglutition.

Appetite.—Burning, very troublesome thirst.

Stomach.—Singultus and spasms in œsophagus ; constant nausea ; great inclination to vomit ; *inclination to vomit, with violent gagging and pressure in the stomach ;* violent gagging and ineffectual effort to vomit ; *frequent violent vomiting,* attended with nausea ; frightful colic ; *diarrhœa and convulsions ;* frequent alternation of vomiting and diarrhœa ; vomiting, with aggravation of the pains in the stomach and intestines ; tearing, and frequently very violent pains in the stomach ; horrid pains in the stomach and bowels ; crampy pressure in the stomach.

Abdomen.—Violent spasmodic pains in the abdomen ; intense tearing pain in the epigastric region ; pains in the abdomen, causing anguish ; violent colic in the abdomen, with frequent tenesmus or frequent diarrhœic stools, and violent gagging.

Stool.—Constipation ; diarrhœa ; copious, painful, blackish evacuations, sometimes mixed with blood, attended with tenesmus and weakness.

Urine.—Scanty urine.

Chest.—Difficulty in breathing, and spasmodic contraction of the chest; suffocative arrest of breathing; oppression of the heart; anxiety about the heart.

Limbs.—Trembling of the limbs ; spasmodic painful contraction of the fingers and toes ; painful jerking in the hands and feet, extending into the upper arms, *and passing into a cramp of the calves when it reached the legs;* coldness of the limbs ; cool hands ; pains in the thighs ; *violent cramps in the calves, during which the two big toes are tetanically drawn towards the soles of the feet with great pain.*

Secale cornutum, or ergot of rye, is a medicine in which we have great faith in some of the worst varieties of cholera. We have seen the most decided advantage from its administration in cases of very copious discharges both alvine and by vomiting. While we would recommend cuprum and veratrum to be given rather by themselves than in alternation, we should feel inclined to give secale alternately with arsenicum. It is not easy to give a reason for this beyond the observation, that so given, we have seen more benefit to the patient than from either singly ; and we do not think that the two medicines interfere. We should give it strong, in the first, second, or third dilution ; a dose every half-hour alternately with arsenic ; and this in cases, particularly of women, where there is great prostration and violent watery discharges. We have seen cases, which we looked upon as quite hopeless, steadily rally under this treatment ; and we have no doubt of the beneficial effects of the remedies.

By far the fullest account of the effects of ergot of rye is

that given by Dr. Buchner of Munich, in the 4th vol. of the British Journal of Homœopathy. It is well known that a very fatal disease like an epidemic has frequently prevailed from the use of this substance among the poor of France and Germany. In the district of Guyenne and Sologne alone, there died in the year 1770 no less than 8000 persons from this poison.* It is described by Taube† as coming on "suddenly without any warning; the patient is attacked with giddiness; dimness of sight; frightful contortions of the body; trembling of the limbs; cold perspiration; great anguish; restlessness; hippocratic countenance; intense thirst; pain at the sternum; oppression of the chest; the pulse small, intermittent, often imperceptible." If to this were added vomiting and purging, which secale cornutum sometimes produces, it would be impossible to discriminate between the ergot disease and cholera.

SYMPTOMS OF SECALE CORNUTUM.

General symptoms.—Long continued indolence; great general languor; *rapid sinking of strength; complete prostration of the assimilative functions; skin becomes blue and cold; spasms;* the joints appear as if dislocated, the spasms being even of an epileptic or tetanic kind, alternating with stiffness; *spasms, attended by violent retching and thirst; vertigo;* loss of sense and consciousness; general livid appearance; violent twitching motions of the voluntary muscles; *violent convulsions, attended with excessive pain;* during the spasms the muscles are constantly trembling, and the spasms, which were at first alvine, gradually increased to tonic and real tetanic spasm; *violent convulsions of the ex-*

* Tissot, Nach. v. d. Kriebelkrankheit, 1770.
† Geschichte der Kriebelkrank. Gött. 1782.

tremities several times a-day; during the remission the fingers remain numb, and frequently contracted; epileptic spasms; sudden vertigo and blindness; the patients were entirely deprived of their senses, fell down, and had to endure the most violent contractions of the joints; convulsions; trembling; violent ineffectual retching; the elbows were pressed to the chest; the wrist-joints were bent; the fingers clenched; the heels were drawn upwards towards the tendo achillis; the toes were drawn under the soles of the feet; tetanus; cold sweat during the paroxysm.

Skin.—Withered, dry; the skin all over looks lead-coloured; drawing and creeping increasing to spasms, with contractions of the limbs, and profuse sweats.

Fever.—Disagreeable feeling of coldness in the back and abdomen, also like shuddering, likewise in the extremities; sudden chilly creeping; violent chilliness also, with shaking; fever, first violent chilliness, afterwards burning heat, with unquenchable thirst, the heat being particularly felt in the interior, attended with anxiety, which deprives one of the understanding; the pulse is feverish, small, contracted; slow, small intermittent pulse; the pulse is at times slow and full, at others small and tight; *spasmodic, small, accelerated, and frequently intermittent pulse;* sweat from the head to the pit of the stomach; *cold sweat, also viscid.*

Moral symptoms.—Lowness of spirits; melancholy; *anguish; great and oppressive anxiety*; stupor, with prostration; loss of consciousness and sensibility; consciousness continues until his last breath; delirium.

Head.—Vertigo; stupefaction and confusion of the head; headach.

Eyes.—Sunk; obscuration of sight; squinting.

Ears.—Humming and roaring in the ears; hardness of hearing.

Face.—Wretched complexion ; *the face is sunken and pale, fæces hippocratica ;* unpleasant distortion of the features ; livid.

Mouth.—Thin whitish coating of the tongue ; discoloured, brown, and finally black tongue ; grinding with the teeth ; voice feeble and inaudible ; inability to speak distinctly ; difficult stuttering speech.

Throat.—Dryness in the throat ; violent burning in the fauces.

Appetite.—Unquenchable thirst ; thirst and dryness of the throat.

Stomach.—Nausea ; vomiting ; violent vomiting ; constant retching and pressure in the pit of the stomach ; *constant pain ; oppression and pressure in the pit of the stomach, with constant ineffectual disposition to vomit ; the patients asked constantly for drink ;* painful sensation in the præcordia ; heat and burning in the pit of the stomach.

Abdomen.—Violent colic ; great feeling of coldness in the back and abdomen ; burning in the abdomen ; distention of the abdomen, with pain on touching the parts.

Stool.—Constipation, with frequent ineffectual urging ; painful diarrhœa, with great prostration ; putrid and fœtid colliquative diarrhœa ; *involuntary diarrhœa ; cholera-like spasm ; sudden striking change of features, with deep sunken eyeballs surrounded with blue margins ; constant nausea and vomiting after taking the least food ; frequent diarrhœa, with watery, slimy evacuations ; shrivelled skin, which feels cool to the hand ; inexpressible feeling of anxiety and burning in the pit of the stomach ; hoarse, hollow voice ; suppression of urine ; cramp in the calves ;* paralysis of the upper extremities ; *scarcely perceptible pulse ; unquenchable thirst.*

Urine.—Difficult urination, with constant urging in the bladder ; burning in the urethra during micturition.

Larynx.—*Voice feeble and inaudible.*

Chest.—Oppression of the chest; slow breathing; thirteen respirations a minute; *anxious and difficult respiration;* moaning; heart-beats infrequent; violent palpitation.

Arms.—Weakness and weariness; violent pains in the limbs; paralysis of the arms; coldness; blue colour; the whole hand is drawn in, so that several bones of the carpus were pressed outwards; the whole forearm suffered by the spasm; pain relieved by endeavouring to straighten the contracted part; violent contraction of the fingers; the fingers are violently drawn towards the palm of the hand; the pains are relieved by forcibly straightening the fingers, which, however, contract again immediately.

Legs.—Languor and pains in the lower extremities; tetanic spasm of the toes; numbness, insensibility, or coldness of the legs; *the limbs become pale, cold, and shrivelled, as if they had been lying in water for a long while; spasms and convulsions of the extremities.*

Nux vomica we have found of use in cases distinguished by vomiting and cramps. When there is little or no alvine evacuation, and great suffering from spasms, and sickness with pain at the epigastrium before collapse has taken place, we should recommend its administration in the dose of a drop of a low dilution every ten minutes, either alone or alternately with arsenicum. We do not think that it has yet obtained so high a place in the treatment of cholera as it merits, and we should strongly advise any practitioners who have the cholera to treat, to give *nux vomica* early and in large often-repeated doses. The following case of poisoning, described by M. Ollivier, is one of the best we have yet met with. It is referred to both by Wibmer and Dr. Christison. Dr. Drogartz, who saw the case a few minutes after the

poison had been taken, found the head drawn back and towards the left side, the body stiffened and straightened, the legs pushed out and forced wide apart, no pulse or breathing perceptible, the face and hands were livid, and the muscles violently convulsed.*

General symptoms.—Tearing and heaviness in all the limbs, with stiffness in the muscles and joints; violent pain in the muscles at every movement; convulsions and spasms; stiffness of the limbs; *extremely painful muscular contractions, continuing from three to four minutes, after which period they are interrupted by a violent spasm;* tetanic spasms; fainting fits after making the least exertion; sudden failing of strength.

Sleep.—Great drowsiness; during sleep, starting at night, and in the daytime when waking.

Fever.—Coldness of the whole body with blue skin, particularly of the hands, and blue nails; the temperature of the skin is diminished all over: *violent thirst;* flushes of heat; *pulse small and quick or intermittent; collapse of pulse with full consciousness.*

Moral symptoms.—Apprehends death, and thinks that death is near.

Head.—Vertigo; headach.

Face.—Redness and heat of cheeks; *pale, wretched look.*

Throat.—Burning in the œsophagus up to the mouth.

Stomach.—Nausea; *violent vomiting; the region of the stomach sensitive to pressure; violent pain in the stomach; cramp-like pains in the stomach with pressure; burning at the pit of the stomach.*

Abdomen.—Cramp-like pains; burning in the abdomen.

Fœces.—Ineffectual urging to stool; frequent urging with tenesmus and pressure in the anus, and cutting around the

* Archiv. Générales de Médecine, Mai 1825, p. 17.

umbilicus; small stools, mostly consisting of mucus, with urging and tenesmus.

Urine.—Painful, ineffectual desire to urinate.

Larynx.—Difficult speech.

Chest.—Shortness of breath; *painful pressure across the chest, arresting the breathing; pain as if the sternum were oppressed; a sort of oppression in the region of the heart, rendering breathing difficult;* palpitation of the heart; tension and pressure in the outer parts of the chest, as if oppressed by a load.

Trunk.—Contractive pain in the small of the back; tearing in the back; contractive pain in the back.

Arms.—Drawing pains in the arms; *cold hands; cold sweat of the palm of the hands;* cramp-like contraction of the palm of the hand.

Legs.—Coldness of the lower limbs; drawing, tearing pain; *cramp pain in the calves.*

Lachesis and *Crotalus Horridus.*—We are obliged to unite these two potent substances in our description; for it is well known that under the former name both of these snake poisons generally pass. And we do not think this confusion is of much detriment to our present object, which is rather to call attention to this class of poisons, as likely to furnish valuable remedies in cholera, than to enter into any critical analysis either of the symptoms of the medicines, or the particular cases where they are likely to be of use. Our experience of their utility is too small, but from the general effects they produce, we are of opinion, that if we could obtain some snake poisons in a pretty concentrated form, they might be most serviceable in cholera.

Besides the careful investigation of the learned and accomplished naturalist and physician, Dr. Hering of Phila-

delphia, upon the effects of the poisons of the lachesis and crotalus, the chief sources of our knowledge upon this subject are the writings of the Abbé Fontana and Dr. Mead, on the Viper, and Russell's Indian Serpents. The most interesting facts disclosed by their investigation, as far as concerns our present subject, are, that the deadly effects are more certain and rapid in warm countries, and warm weather, than in cold, that the poison seems to act directly on the nerves of organic life, and afterwards affects the blood, and that many of the symptoms bear a close resemblance to those of cholera. The following quotation from Fontana will, we think, be interesting for many reasons—it seems to point to the Homœopathic principle:—

"In the first place, nothing is more common in medicine, than to find substances which, when applied to one part of the animal machine, act as a remedy; instead of which they occasion diseases, and even death, when applied to others. Several medicines, particularly in the class of poisons, operate precisely in this way; fresh examples of which will be given in the continuation of this work.

"Electricity occasions death by depriving the heart and fleshy fibres of their irritability, as I have proved in my work on Animal Physics; and this same electricity is notwithstanding one of the strongest stimulants to the muscular fibres that is known. It restores life by exciting irritability in the very animals in which it had an instant before destroyed it. Amongst all the stimulants that can be employed to call the animals back to life, that the electrical shock has thrown into a state of insensibility, a proper application of gentle sparks appears to me the most efficacious remedy.

"In the second place, the application of fixed air has a very different effect when introduced into the intestines than when it is respired. In the first case its action is imme-

diate ; in the second, it seems to need the assistance of the blood to convey its action to the heart. Whence it follows, that its effects may be very different in these two circumstances.

" These particulars naturally led me to think, that the venom of the viper likewise kills animals by destroying their irritability. I procured fifty of the strongest and largest frogs I could meet with. I preferred these animals because they are livelier than others ; because they die with greater difficulty ; because they are more irritable ; and, lastly, because their muscles contract even several days after they are dead.

" I had each of them bit by a viper, some in the thigh, others in the legs, back, head, &c. Some of them died in less than half an hour, others in an hour, and others again in two, three, hours, or somewhat more. There were some again that were not affected, whilst others that did not die became nevertheless swelled. There were likewise others amongst them that fell into a languishing state, their hind legs that had been bit continuing very weak, and even paralytic. In some of them I contented myself with introducing cautiously into a wound made with a lancet at the very instant, a drop of venom. These last lived longer than those I had had bit ; neither of them however escaped. I constantly took the precaution to prevent the venom I introduced into the wound being carried out by the blood that flowed from it. Some of these frogs swelled very much, others but little, and others not at all. The wounds of almost all of them were inflamed more or less. There were some, however, that died very suddenly without the smallest mark of inflammation. A short time after these animals had either been bit, or wounded and *venomed*, the loss of their muscular force, as well as that of the motion of their ex-

tremities, was very evident. When they were set at liberty, they no longer leaped, but dragged their legs and bodies along with great difficulty, and could scarcely withdraw their thighs, when they were pricked with a needle, of the pain of which they seemed almost insensible: by degrees they became motionless and paralytic in every part of the body, and after continuing a very short time in this state, died.

"I now opened the abdomen, and stimulated the nerves that pass through it in their way from the vertebræ to the thighs. I employed the strongest corrosives, but could excite no motion nor tremulus in the lower extremities. I pricked the muscles with as little effect, and thrust a long pin into the spinal marrow, without producing any motion or trembling either of the muscles or limbs. In none of these parts, all of which had died at the same time, was there the smallest vestige of life. The nerves were no longer the instrument of motion. The muscles no longer contracted, and were no longer sensible to stimuli. The heart alone in some few of them continued to move languidly, and its auricles were swelled and blackened by the blood with which they were surcharged. This organ did not, however, seem to have suffered much from the activity of the venom. It continued its motion, notwithstanding the entire death of the other parts, and renewed its vibrations on being strongly stimulated with needles. This motion and these oscillations were, however, but of short duration after the death of the animal.

"Persons have been sometimes met with, who, having been bit by a viper, have remained paralytic in some particular part of the body during life. A short time ago a woman in Tuscany, who had been bit in the little finger by a viper, became, after various other complaints, paralytic throughout the whole right side of her body, and could never

be cured. In a word, it is certain that all those who have met with this accident, complain soon after of an universal weakness. Their muscles refuse their office. They become dull and heavy, have no longer the free exercise either of body or mind, and fall insensibly into a kind of lethargy: so true it is, that this venom induces a palsy of the muscles, and robs them of that active property, called by the moderns animal irritability. In the continuation of this work, I shall show what opinion ought to be held of that system, and the changes I have made in it.

"Thus, then, it appears that animals die of the bite of the viper, from their fibres losing that irritability, which is the grand principle, both of voluntary and involuntary motions in the animal economy."*

Dr. Mead gives the following symptoms as produced by the viper poison,—"Great faintness, a quick, low, and sometimes interrupted pulse; great sickness at the stomach, with bilious convulsive vomitings; cold sweats, and sometimes pains about the navel."†

He recommends its use in ulcers and some forms of lepra, observing, "the patient ought to eat frequently of viper-jelly or broth, or rather, as the ancient manner was, to boil vipers and eat them like fish; or (if this food will not go down, though really very good and delicious fare) to make use at least of wine in which dried vipers have been digested."‡

The following cases are related in Russell's Indian Serpents:—

"A daubish belonging to Cornet M'Gregor was bitten in

* Treatise on the Venom of the Viper, &c., by Felix Fontana; translated by Joseph Skinner. London, 1787.

† A Mechanical Account of Poisons, by Richard Mead, M.D., 1747, p. 8.

‡ *Vide* Pharmacop., London.

the toe by a snake which appeared to be a Cobra di capello. A few drops of blood issued from the part, and he was instantly sensible of pain. When he came to me about half an hour after the accident, the pain had advanced as high as the joint of his knee. I immediately prepared and gave him one of the snake-pills as directed, and that no part of the prescription should be omitted, the liver of a frog was applied to the wound. In the course of ten minutes after giving the first pill, the pain had got to the top of his thigh, and became much more severe. I then gave two more pills, and ordered a bottle of Madeira to be warmed. Of this he drank about two cupfulls, but part only remained in his stomach. The patient now complained of severe pain in his belly, which on examination appeared to be tense and much swelled. A sense of tension or tightness spreading fast towards the breast, and respiration becoming extremely laborious, an attempt was made to make him take two more pills, but deglutition being impeded, a part of them only reached the stomach, and was immediately rejected. From this time the stricture of the œsophagus increased so much, that nothing could be forced down his throat; he foamed at the mouth; his eye stood staring and fixed; his pulse and respiration became hardly perceptible; in short, every vital motion seemed at a stand. I applied spirits of hartshorn to his mouth and nostrils, by which in a few minutes, a strong sneeze being excited, he began to breathe and said 'better.' After he recovered a little, he told me he felt the pain descending retrograde, in the same track in which it had arisen, and wished for sleep. He slept for half an hour, and on awaking vomited plentifully. He had now recovered his senses, and said he only felt a little pain in his toe, and in two hours he was able to walk home, but did not recover his fatigue for some days.

"A Sepoy was bit by a long snake, supposed to be a Cobra di capello. His jaws became locked in less than a quarter of an hour, and very little sign of life remained. Four large punctures were observed in the ancle, to which *eau de luce* being applied, the man gave signs of sensibility by drawing up his legs. Two bottles of Madeira were then made warm, and the jaws being forced open so as to introduce a funnel, almost the whole of the wine in the course of half an hour was then poured down. The application of the *eau de luce* was continued for three hours, till the whole of the bottle was expended. The patient was now totally without any sense of feeling whatever, and had it not been for a gentle heave of his breast every two or three minutes, I should have thought him dead.

"He remained in this torpid state for four hours, and then began to show signs of returning life. It was twelve hours more before he recovered his speech, and he continued many days in a very languid state. He is now one of the stoutest men in the first grenadier company."

Wibmer* gives the following summary of the effects of snake poisons. After describing the local effects of the bite, he says that they are attended with inclination to vomit; fainting fits; small, irregular pulse; thirst; frequent cardialgia; vomiting of bilious fluid; anguish; oppression; difficulty of breathing; dimness of sight; loss of consciousness; trembling of the limbs; universal loss of power; and death from a few minutes to several days after the reception of the poison.

CROTALUS HORRIDUS.

General symptoms.—Vertigo, with headach and nausea; languor, and sudden decrease of the vital forces, with fever;

* Op. cit., vol. v. p. 37.

frequent fainting spells, with imperceptible pulse and inclination to vomit; appears dead; is motionless; speechless, with trembling pulse; paroxysmal trembling and convulsions; extreme restlessness.

Skin.—Cold; black spots over the whole body.

Sleep.—Drowsiness, with cold skin.

Fever.—Cold skin, with nausea; cold hands and feet; shuddering, with diarrhœa; pulse 100 to 130, with frequent fainting turns; pulse feeble and quick, with fever and languor; pulse, first hard, then quick, then feeble and slow; tremulous, imperceptible pulse, with loss of motion and speech; intermittent pulse; constant fever with thirst; bilious vomiting; palpitation of the heart; anguish; quick and feeble pulse; languor, and rapid sinking of the vital forces.

Moral symptoms.—Lowness of spirits; indifference; languor; melancholy, with sudden weakness; headach; sickness at the stomach; diarrhœa; melancholy; sadness.

Head.—Vertigo, with nausea; dartings in the temples.

Eyes.—Sunken eyes; blue circle round eyes.

Face.—Leaden-coloured face.

Throat.—Difficult deglutition of saliva.

Appetite.—Unquenchable burning thirst.

Stomach.—Hiccough; inclination to vomit, with cold skin; violent vomiting after food; vomiting green; pain in pit of stomach; pressure in the pit of stomach.

Abdomen.—Burning in the hypochondria; burning in the abdomen; distention of the abdomen.

Fœces.—Involuntary stools.

Urine.—Retention of urine.

Larynx.—Hoarseness, and weak, rough voice; loss of voice.

Chest.—Difficulty of breathing, with unquenchable thirst,

and tightness of the chest as if the lungs would not expand ; asthma, with anguish ; thirst, nausea, and diarrhœa ; oppression of the chest.

Arms.—Spasmodic, bruised pain ; trembling of the hands ; laming pains in the bones of the fingers.

Legs.—Drawing pains ; spasmodic pain, with sensation, as if the flesh would be raised ; painful numbness in the toes, as after cramp.

LACHESIS.

General symptoms.—Heaviness in the limbs ; pain as if bruised ; painful uneasiness in the limbs ; tearing in the limbs ; paralysis ; languor, with feeling of prostration ; sudden falling as if struck by lightning, with involuntary discharge of fæces, with vomiting ; frequent fainting fits ; trembling of the whole body ; sensation of internal trembling as if from anguish ; convulsions ; spasms.

Sleep.—Drowsiness ; is unable to sleep on account of internal uneasiness.

Fever.—Chilliness ; coldness of the knees and calves ; small, weak, and irregular pulse ; intermittent and small pulse ; cold sweats.

Moral symptoms.—Despondency ; restlessness ; loss of sense.

Head.—Vertigo ; headach ; throbbings in the temples.

Ears.—Roaring in the ears ; deafness.

Face.—Sunken face, with expression of suffering ; livid, grey complexion ; blue rings round the eyes.

Throat.—Soreness of the throat ; pain during deglutition ; dryness of the pharynx and œsophagus.

Stomach.—Nausea ; vomiting ; vomiting of the ingesta ; spasmodic vomiting ; vomiting, with diarrhœa ; violent pain in the stomach, increased on pressure ; pressure in the pit

of the stomach ; violent spasms in the stomach ; burning in the stomach ; alternate coldness and heat in the stomach.

Abdomen.—Burning in the abdomen ; tearing ; rumbling in the abdomen.

Fæces.—Diarrhœa, with violent spasmodic colic ; with vomiting ; burning in the anus.

Larynx.—Hoarseness, with roughness and burning in the throat ; failure of the voice.

Chest.—Difficulty of breathing ; oppression of the chest ; constrictive sensation in the region of the heart ; pressure in the region of the heart ; palpitation of the heart.

Trunk.—Pain in the small of the back ; tearings in the back.

Arms.—Pains in the arms ; creeping and pulling in the muscles ; cramp between the intercarpal bones ; tearing in the hands going up to shoulders.

Legs.—Tearing in the hip ; drawing in the lower part of the limbs ; cramp in the calves and knees ; coldness of the calves and knees ; cramp in the anterior portion of the feet, with frequent tearings of the arms and lower limbs ; coldness of the feet ; spasmodic drawing up of the toes.

Hydrocyanic acid we have seen give at least temporary relief in a few cases where there was great prostration and oppression of the chest. One poor woman, a sober, respectable person, who had been ill for twelve hours when we saw her, and complained much of excessive uneasiness at the heart, exclaimed after a few doses of hydrocyanic acid, "God be thanked, my breast is getting benefit," and for some time there was decided improvement both in her sensations and appearance. On the whole, however, we believe that the number of cases in which it is indicated, will not be found large ; perhaps the particular period suited for its administration is very short.

The following case of poisoning quoted by Wibmer and Christison will illustrate the group of symptoms which are sometimes met with in cholera, and for which this medicine is adapted: "A thief took forty grains of the pure acid in dilution, and after staggering a few steps, he sunk without a groan to the ground. A physician who instantly saw him found the pulse gone and the breathing for some time imperceptible. After a short time he made so forcible an expiration, that the ribs seemed drawn almost to the spine. The legs and arms then became cold, the eyes prominent, glistening, and quite insensible, and after one or two more convulsive expirations, he died."*

General symptoms.—Rapid languor and weakness of the limbs, particularly the thighs; cramp in the back; the limbs become insensible and stiff; *the beats of the heart become more and more slow, small, imperceptible, until apparently extinct; diminution of the animal heat.*

Skin.—Dryness of the skin; *general paleness with a blue tinge.*

Fever.—Feeling of coldness within and without.

Moral symptoms.—Despondency; loss of consciousness.

Head.—Vertigo; headach.

Eyes.—Eyes half open, distorted eyes; pupils insensible to the light; the lids are wide open; immoveable lids; obscuration of sight.

Ears.—Roaring or buzzing; hardness of hearing.

Face.—Sunken face; pale bluish face; sallow and gray complexion.

Mouth.—Cold feeling in the tongue; loss of speech.

Throat.—Heat in the pharynx and œsophagus.

Appetite.—Violent thirst.

* Hufeland's Journal, 1815, ♃ 113.

Stomach.—Disposition to vomit; vomiting of a black fluid; cold feeling in the stomach; pressing in the pit of the stomach, with great oppression.

Abdomen.—Coldness in the abdomen alternating with burning; rumbling in the abdomen.

Fœces.—Involuntary stool.

Urine.—Retention of urine.

Chest.—Rattling, moaning, slow breathing; *feeling of suffocation; pain and pressure in the region of the heart;* irregularity of the motions of the heart; *feeble beating of the heart.*

We may add the symptoms of *Laurocerasus*—a medicine we have never had occasion to administer.

General symptoms.—Great languor of the whole body, particularly of the lower extremities; excessive weakness and prostration; sudden fainting fits; convulsions; spasms of the back; falls down immediately, and is lifeless in five minutes; without pulse or breath; with icy coldness of the extremities, and paralysis of all the muscles.

Fever.—Coldness of the extremities; the body feels much colder than natural; chilliness of the whole body, with pains in the back; pulse (as well as the heart) scarcely perceptible, slow; pulse small and slow, also contracted; pulse feeble and slow.

Moral symptoms.—Insensibility and complete loss of sensation.

Head.—Vertigo with stupefaction; vertigo on raising the head; aching in the head; beating in the head.

Eyes.—Glaring; distorted; eyes half open.

Ears.—Buzzing in the ears; hardness of hearing.

Face.—Sunken countenance; livid grey-yellow complexion; pale appearance.

Mouth.—Loss of speech.

Throat.—Burning in the throat; deglutition is impeded.

Appetite.—Violent thirst, with dry mouth.

Stomach.—Hiccough; also the whole day, nausea; vomiting and loathing; vomiting of the ingesta, and nausea; pain in the stomach; burning in the stomach and abdomen; pressure in the stomach.

Abdomen.—Pinching in the abdomen; burning in the abdomen; distention of the abdomen.

Fæces.—Discharge of fæces without being conscious of it; burning at the anus.

Urine.—Retention of urine for four days; diminished secretion of urine.

Chest.—Slow, feeble, almost imperceptible breathing; tightness of the chest, with pressure in the region of the heart; oppression of the chest, with difficulty of breathing; pressure, as from a load on the chest; palpitation of the heart.

Cicuta virosa, or water-hemlock, is indicated in cases where the respiratory apparatus acts convulsively, as for example where there is violent hiccough or loud belching. A dose of it to the amount of a drop of the second or third dilution may be given to relieve this very painful and troublesome symptom. We have seen it of decided advantage in such cases.

Wepfer* has related the particulars of the poisoning of several children by the root of this plant. In one of them, Jacob Mäder by name, who was six years old, the countenance assumed a dreadful expression, his teeth became clenched, and he rolled his eyes about. "Hiccough was frequent, and he seemed to wish to vomit, but could not."

* Hist. Cicut. Aquat., Lugd. Bat., 1733, p. 6.

There were also violent convulsions of the limbs. In another of the children, Methias Gref, eight years old, a pulsating tumour was observed at the precordial region, which beat upon the diaphragm, attended with violent hiccough.

General symptoms.—Crampy stiffness of the whole body, with coldness of the same; the most violent tonic spasms, so that neither the curved limbs could be straightened, nor the straight limbs curved; the limbs are tossed to and fro; general convulsions; trembling in the upper and lower limbs; insensibility.

Fever.—Coldness over the lower limbs, afterwards the arms; they want to sit near the stove.

Head.—Vertigo; hammering pain in forehead.

Ears.—Roaring in the ears; deafness.

Face.—Deadly paleness of the face, also with coldness of the face and cold hands; grinding of the teeth.

Appetite.—Great thirst.

Stomach.—Hiccough, resounding at a distance; nausea; vomiting; burning and scraping sensation from the throat to the region of the stomach; burning pressure at the stomach.

Abdomen.—Rumbling in the abdomen; heat in the abdomen; horrid colic.

Fæces.—Diarrhœa.

Urine.—Retention of urine; frequent desire to urinate.

Larynx.—Hoarseness.

Chest.—Tightness in the chest, she is scarcely able to breathe the whole day; want of breath.

Trunk.—Tonic spasms of the cervical muscles.

Arms.—Arms are cold and stiff; deadness (numbness, coldness) of the fingers; stitches in the arms.

Legs.—Painful stiffness and rigidity in the muscles of the lower limbs; tearing pains in the thighs.

Tobacco we have little experience of in cholera; but we should feel disposed to try it in certain cases, if we again had the opportunity. The cases for which it would best answer are those attended with much depression, vomiting, eructation, and obstinate dysuria, or suppression of urine, along with pains in the bowels and cramps, and oppression of the chest.

Grant* relates how a peasant washed himself and his wife with an infusion of tobacco one evening at nine o'clock, and that at ten o'clock they became giddy and as if drunken, that afterwards the man was attacked with violent eructation and vomiting, and his wife with diarrhœa and gripes. In the morning the physician who saw them found them both suffering from insatiable thirst, quick pulse, dry and hot skin, and the man from violent tormina, inclination to vomit, cramps in the hand and arms, and constriction of the chest; the woman from anxiety, nausea, and oppressed, hurried respiration.

General symptoms.—Great weariness; languor; and debility of the extremities and trembling of the hands and feet; general debility and coldness; trembling of the hands, after which he lies as if paralyzed, with stupor, headach; general paleness, colic, difficult breathing; lastly coma, pulse 68; death, vacillation, trembling, general weariness of the muscles; spasmodic contraction of the muscles; spasms; general insensibility; relaxation; fainting fits; trembling; loss of consciousness; violent involuntary contraction of all the muscles, with expressions of the most horrid pain; he constantly put his hand on the abdomen and pressed with great violence; spasms and convulsion; death-like paleness.

Sleep.—Restless sleep, with coldness.

* Duncan's Med. Comment., vol. i. p. 327.

Fever.—Coldness of the extremities; coldness and shuddering of the whole body; warmth of the body, with icy cold hands; profuse sweat, with coldness of the extremities; icy coldness of the legs, with heat of the body; profuse sweat about the head and on the chest; cold sweat; cold sweat on the hands; viscid, cold sweat; coldness of the limbs and great languor, with slow intermittent pulse; small, slow pulse; small, languid pulse, with cold skin, and viscid sweat; hard, quick pulse; the pulse is almost imperceptible, very small, intermittent, exceedingly slow, 45 beats.

Moral symptoms.—Muttering; delirium; oppressive anxiety or insensibility; great restlessness, anguish, and oppressive apprehensiveness.

Head.—Vertigo; violent headach.

Eyes.—Obscuration of sight.

Ears.—Roaring in the ears.

Face.—The face looks bluish and contracted; death-like paleness.

Mouth.—The patient was not able to talk, except in a low tone, and with intermissions.

Throat.—The throat is so dry that he is scarcely able to swallow; burning in the throat and mouth; spasm of the pharynx.

Stomach.—Hiccough; spasmodic hiccough; nausea; vomiting; spasmodic vomiting; singultus; vomiting, with sweat or with diarrhœa, and pinching in the abdomen; violent vomiting, diarrhœa, anguish, debility, stupefaction, and sweat; vomiting of a quantity of liquid in a long stream; vomiting of mere water; vomiting as soon as he begins to move; violent vomiting, after which retching remained; pressure in the stomach; burning in the stomach; feeling of coldness in the stomach, with nausea and disposition to vomit;

feeling of coldness in the stomach and along the vertebral column.

Abdomen.—Violent contractions of the abdominal muscles; violent aching pains in the hypogastrium, with nausea and disposition to vomit, or with chilliness of the whole body; horrible pains in the abdomen; sensation of violent burning, obliging him to shriek; heat in the intestinal canal; violent colic, with vertigo, headach, nausea, contraction of the abdomen, small pulse, cold and damp skin, rumbling in the abdomen, with feeling of coldness in the whole body.

Fœces.—Diarrhœa; tenesmus, and violent burning pain in the anus during stool; discharge of a continuous stream of green, watery liquid in large quantity.

Larynx.—Roughness of voice.

Chest.—Great difficulty of breathing; paroxysms of suffocation; oppression of the chest and anguish; pressure and stitches in the chest; irregular, generally slow beating of the heart; pressure on the sternum as from something heavy.

Back.—Contractive pain in the small of the back.

Extremities.—Coldness and trembling of the limbs; spasms of the limbs.

Arms.—Cramps in the hands and arms; spasmodic contractions in the hands and arms.

Legs.—Violent pains in the legs; cramp from the toes to the knee.

Tartarus emeticus is a medicine we have occasionally employed, and with advantage in cases of long-continued nausea and vomiting and general depression, without the actual state of collapse.

General symptoms.—Weariness in every part of the body; complete insensibility; spasmodic movements of the hands and arms; violent alvine spasms, with loss of consciousness;

fainting fits ; feeling of coldness in the pit of the stomach ; great laziness and weariness in the limbs ; relaxation of the whole body ; great prostration and languor ; exhaustion ; collapse of pulse ; loss of speech ; marble coldness of the body.

Skin.—Pale skin ; cold, clammy skin, particularly about the head and extremities ; insensibility of the skin.

Sleep.—Drowsiness ; restless sleep.

Fever.—General uneasiness, alternating with nausea ; chilliness about the whole body, with tremor ; cold as marble after the alvine spasms, with collapse of pulse ; cold, clammy sweat ; quick, feeble, tremulous pulse ; pulse weaker and slower than usual ; slow pulse ; small, contracted, accelerated pulse ; suppressed, irregular, imperceptible pulse ; collapse of pulse.

Moral symptoms.—Loss of sense ; dulness and dizziness ; apprehensiveness and restlessness ; great anxiety ; anguish, with cold sweat ; tendency to start.

Head.—Vertigo ; headach.

Face.—Blue margins around the eyes ; blue lips ; pointed nose ; wretched look ; and great paleness.

Throat.—Burning heat in the throat ; difficulty of swallowing.

Mouth.—Dryness of the mouth ; the tongue is moist and clean, or grey, and coated white.

Stomach.—Nausea, and disposition to vomit ; constant nausea, vomiting, and diarrhœa ; hiccough ; ineffectual retching ; frequent, violent retching, with accumulation of water in the mouth ; violent vomiting ; spasmodic vomiting ; the vomiting is followed by great languor ; drowsy and weary feeling ; loathing ; desire for cooling things ; pale, sunken face, and dry swimming eyes ; burning in the region of the stomach ; excessive pain in the stomach.

Abdomen.—The abdomen sensitive to contact; violent pressure in the abdomen.

Fæces.—Uninterrupted watery evacuations; involuntary diarrhœic stool; diarrhœa and vomiting; tenesmus; bloody stools; burning at the anus after stool.

Larynx.—Feeble voice; aphonia.

Chest.—Short, difficult breathing; the inspirations are less frequent; unusual oppression of the chest; palpitation of the heart.

Arms.—Violent tearing, jerking, and drawing in the arm; cold hands, and icy coldness of the tips of the fingers.

Legs.—Heaviness in the loins; lancinating, tearing pain in the hips, thighs, and legs; extremely painful cramps in the thighs and calves; cold feet.

Carbo Vegetabilis is said to have been useful in cases of great collapse, but for our part we cannot say we have any great faith in its efficacy in such a disease as cholera. We have tried it occasionally, but without obtaining any results.

General symptoms.—Drawing pain in the limbs in almost every part of the body; great anguish; tremulousness of the body, attended with great failing of strength; languor, especially in the lower extremities; attacks of sudden weakness like fainting; vertigo; loss of consciousness for some hours.

Sleep.—Drowsy, but unable to fall asleep.

Fever.—Chilliness and coldness of the body; chilliness with thirst, sometimes only internal; pulse frequent, feeble, depressed; great disposition to sweat.

Moral symptoms.—Anguish; tendency to start.

Head.—Vertigo; violent aching; pulsating pain in the forehead; buzzing in the head.

Face.—Complexion becomes grey-yellow; great paleness of the face.

Throat.—Soreness in the throat; coldness in the throat.

Stomach.—Nausea; weight in the stomach; burning sensation in the stomach.

Abdomen.—Every piece of clothing presses upon the hypochondria, and seems intolerable to him; disagreeable pressure in the abdomen.

Fæces.—Burning in the rectum after stool.

Urine.—Greatly diminished emission of urine; desire to urinate.

Larynx.—Hoarseness; loss of voice.

Chest.—Tightness of the chest and short breathing; spasmodic oppression and contraction of the chest; cold breath; coldness in the throat, mouth, and teeth; stitches through the chest; violent burning in the chest almost uninterruptedly; burning in the region of the heart; palpitation of the heart.

Trunk.—Tearing and pressure in the back; tearing in the cervical muscles.

Arms.—Cramp in the arms; drawing pains in the arms; spasmodic contraction of the hand; icy cold hands; disposition of the hands to become numb.

Legs.—Tearing pain in the lower extremities; violent cramp in the leg, and especially the sole of the foot.

Oxalic Acid ought to be useful in the disease, if we are right in regard to its pathology; for it seems to cause very much the same round of symptoms. When the dose of the substance is large, it seems to cause palsy of the heart; when smaller, it produces violent tetanus and spasms of the respiratory muscles, and when still less, it produces pure narcotism. It seems to cause a morbid state of the blood, for leeches applied to the surface of a patient poisoned by it, in a few minutes fell off hard and dead. It is possible this may have

been from the actual presence of some of the poison in the blood, but more probably from the disorganization of the blood itself, which remains fluid after death by poisoning with oxalic acid. The signs of depressed circulation are also very striking. In general the pulse fails altogether; it is always very feeble, and the skin is cold and clammy.*

We should advise it to be given in cases characterized by sudden collapse. We have tried it occasionally, but without obtaining any results from which an opinion could be formed.

General symptoms.—Extreme lassitude of the body; tremor of the limbs; loss of consciousness for eight hours; convulsions, with one or two deep inspirations before death.

Sleep.—Slept very little; when he did, starting and waking from fright.

Fever.—Clammy perspiration; *his hands, feet, and face were cold, and covered with a cold perspiration; pulse in every case became imperceptible, and even in those who recovered it could not be felt for several hours; this state of the pulse was accompanied with deadly coldness, clammy sweats, sometimes lividity of the nails and fingers; extreme feebleness of the pulse; pulse small, tremulous, intermittent.*

Head.—Vertigo and giddiness.

Mouth.—The tongue felt rather cold than warm.

Appetite.—Unusual thirst; *violent thirst.*

Stomach.—Hiccough, which continues for some time; nausea; vomiting; sensation of grasping in the stomach; burning pain in the stomach, and generally also in the throat; pressure in the stomach; severe pain in the stomach; excruciating pain in the stomach.

Abdomen.—Pain and aching about the navel; pain in the abdomen; borborygmus; a sticking pain in hypochondrium.

* Christison on Poisons, p. 222.

Fæces.—Severe pain in the bowels, and frequent inclination to stool; *constant involuntary discharge of fluid fæces,* occasionally mixed with blood.

Chest.—Difficulty of breathing; oppression of the whole chest towards the right side.

Trunk.—Acute pain in the back, extending down the thighs.

Extremities.—Lividity of the nails and fingers; uneasiness and stiffness in the limbs; *lividity, coldness, and almost complete loss of power of motion in the legs.*

Jatropha Curcas, or physic-nut, is said to have been used with advantage by the Russian physicians in the recent cholera epidemic. We have tried it once or twice, but the results were purely negative. We know but little of the effects of this substance. Percival says,* that a man who had chewed twenty seeds of the plant became affected with violent vomiting and purging, loss of power, and spasms of various parts; and Dr. Christison† found fifteen drops of the oil produce as much effect as an ounce of castor oil.

Digestive apparatus.—Loathing nausea; disagreeable burning sensation in the stomach and œsophagus; violent vomiting and purging, with rush of blood to the head; anxiety, with burning at the stomach; easy vomiting of a large quantity of watery substances resembling the white of an egg, attended with diarrhœa, (as if the contents of the rectum would gush out like a torrent,) accompanied by anguish; coldness of the body; viscid sweat; violent cramp pains in the lower limbs, to such an extent that the calves look flat like splints; violent, excessive evacuations upwards and downwards, attended with complete prostration, spasms, and death; increased evacuations.

* Medical Trans., vol. v. p. 96. † Op. cit., p. 591.

Extremities.—Rheumatic drawing in left foot, extending to the ball of the big toe.

Phosphorus and *Phosphoric Acid* are valuable medicines, both in the painless diarrhœa which precedes cholera, and also in the latter stage of the disease before it passes into the typhoid state. The most prominent symptom at this period is frequently great oppression of the breathing; the respiration is heaving, and the patient complains of the intolerable load upon the chest. We have seen phosphorus give relief, although temporary, in this painful condition; and we should recommend it to be given in pretty strong and repeated doses.

PHOSPHORUS.

General symptoms.—Deadness of the hands and feet; rigidity of the hands, feet, and nose; a sort of insensibility of the whole body; coldness, want of warmth in the whole body; icy coldness of the hands and feet the whole day; languid feeling as of being bruised; general, sudden, excessive weakness; fainting; convulsions.

Sleep.—Drowsiness, without being able to sleep; waking with a start.

Fever.—Coldness of the whole body, as if deficient in animal heat; coldness of the limbs; shuddering of the whole body; chilliness; pulse quick and faint.

Moral symptoms.—Anguish; anxiety; anxious about her illness.

Head.—Vertigo; headach; beating pain in the temples.

Face.—Pale face; sunken eyes, with blue margins; sunken livid countenance, with deep hollow eyes, and blue margins around.

Mouth.—Dry tongue; furred tongue; bleeding tongue.

Throat.—Burning in the pharynx.

Appetite.—Much thirst for water.

Stomach.—Frequent hiccough; nausea, with great thirst; vomiting several times; empty vomiting; violent vomiting; vomiting, accompanied with excessive weakness; small, quick pulse, and pains in the abdomen; continual vomiting; vomiting of the ingesta; sour vomiting; green, blackish vomiting; pain in the stomach—increased on pressure; continual pressure in the pit of the stomach; cramp in the stomach; violent burning heat in the stomach; burning in the stomach also extending to the throat and bowels; violent burning in the stomach, with violent thirst; anguish, and convulsions of the face; cold limbs; weak pulse; feeling of coldness in the stomach, sometimes alternating with heat.

Abdomen.—Violent pain in the whole abdomen; pressure in the abdomen; feeling of coldness in the abdomen; burning and pressure in the abdomen.

Fœces.—Diarrhœa, with tenesmus of the rectum; green and black stools; burning at the rectum.

Chest.—Difficulty of breathing; frequent oppression of the chest; sensation as if the chest were oppressed by a load; pressing oppression; crampy contraction of the whole chest; severe stitches in the chest; palpitation of the heart.

Trunk.—Violent stitches in the muscles of the back.

Arms.—Tearing pains in the arms; cold hands; cramp-like drawing in the hands.

Legs.—Restlessness in the limbs; tearing pains in the thighs; cramp in the calf.

PHOSPHORIC ACID.

Mouth.—Dryness of the mouth.

Appetite.—Violent thirst.

Stomach.—Nausea; vomiting of ingesta; oppression of the stomach; coldness of the stomach; burning under the pit of the stomach.

Abdomen.—Crampy pain in the abdomen; crampy sensation, with pressure in the umbilical region.

Fæces.—Frequent desire for stool; stool loose, and frequent diarrhœa; *white, grey diarrhœa;* involuntary stool.

Urine.—Retention of urine; desire to urinate, with scanty emission.

Chest.—Breathing heavy and oppressed; oppressive anxiety in the chest; constrictive pain in the chest; stitches in the chest; crampy pressure in the chest.

Trunk.—Violent stitch in the small of the back.

Arms.—Paralytic, crampy pressure in the upper arm; the fingers go to sleep, become cold, yellow, and shrivelled, the pulse being slow, small, and scarcely perceptible.

Legs.—Crampy pains in the thighs; cramp-like pains in the calves and feet.

Mercurius solubilis and *corrosivus*, as might be expected, are most useful when there is a complication with cholera and dysentery, or, at all events, when the stools are bloody and attended with much pain. This medicine may be given frequently, and answers well in alternation with aconite. It is better suited for the milder cases of cholera than for its more malignant forms.

MERCURIUS SOLUBILIS.

General symptoms.—Cramp in several parts during motion; restlessness; he is unable to remain quiet; languor; excessive weakness.

Fever.—Violent thirst; continual coldness of the hands and feet; chilling internal coldness; chilliness all over, with

ice-cold hands; accelerated pulse; feeble, slow, trembling pulse.

Moral symptoms.—Inexpressible feeling of some internal, insupportable illness, during which he remains silent, and does not wish to leave his bed; anguish, with restlessness; attack of fear; great tendency to start.

Head.—Vertigo; headach.

Face.—White, clay-coloured face, with attenuated, sunken features, and dim, gloomy eyes; blue-red margins round the eyes.

Mouth.—Tongue coated; complete loss of speech.

Throat.—Difficulty of swallowing; pain in the throat as if too dry; burning in the throat.

Stomach.—Frequent hiccough; nausea; inclination to vomit, accompanied by vertigo; violent vomiting; pressure in the pit of the stomach; burning pain in the pit of the stomach; great painfulness of the pit and region of the stomach, particularly to touch.

Abdomen.—Pressure in the abdomen; contraction; pinching in the abdomen.

Fœces.—Ineffectual desire for stool, with tenesmus; constant desire for stool, passing very little at a time; several scanty, burning, smarting stools through the day; discharges of bloody mucus, accompanied with colic and tenesmus; loose fæces, lined with mucus and blood; white-grey stool; diarrhœic stool, streaked with blood; bloody stools, with painful acrid sensation at the anus; discharges of dark-green mucus; green, slimy, acrid stools, corroding the anus; burning diarrhœa; burning pain at the anus, with loose stools.

Urine.—Constant desire to urinate, but no urine is passed.

Chest.—Oppression in the region of the sternum; burning sensation in the chest; cramp pain and tension in the left side.

Trunk.—Tearing pains in the back.

Arms.—Sticking cramp pain in the muscles of the arm; painful cramp of the fingers and hands.

Legs.—Tearing pain in the thighs; coldness of the thighs; cramp in the lower part of the thigh; painful cramp in the calf; cramp-like contraction of the toes.

MERCURIUS CORROSIVUS.

General symptoms.—General debility; fainting fits; tossing to and fro; trembling of the limbs; spasms in all the limbs; constant spasms in all the limbs; tetanic spasms; convulsions; general insensibility.

Skin.—Cold skin, covered with sweat.

Sleep.—Violent starting when on the point of falling asleep, with violent concussion of the whole body.

Fever.—Burning heat, as if he was roasted; cold sweats; regular, small, tight pulse; irregular, small, contracted pulse; frequent, small, quick, feeble, tremulous pulse.

Moral symptoms.—Indescribable anguish; oppressive anxiety; melancholy.

Head.—Vertigo.

Eyes.—Dim eyes, surrounded by blue margins.

Face.—Bluish paleness of the face; pale face; distortion of the face.

Mouth.—Tongue with little moisture; yellow.

Throat.—Roughness of the throat, rendering speech difficult; burning in the fauces.

Appetite.—Unquenchable thirst; burning thirst.

Stomach.—Nausea; vomiting; violent attacks of vomiting in frequent succession; continued vomiting; habitual vomiting; vomiting of a bloody fluid after violent retching; excessive sensitiveness of the epigastrium to contact; heat in the stomach reaching up to the fauces; pains in the

stomach; violent pains in the epigastrium, increasing very rapidly, and becoming intolerable; gnawing and burning pains in the stomach, spreading over the whole abdomen, and very sensitive to the least touch; excessively burning pains in the stomach and abdomen; burning in the stomach.

Abdomen.—Violent pains in the bowels; burning in the abdomen.

Fæces.—Diarrhœa; evacuation, consisting of very thin fæces; evacuation of fæces mixed with mucus and coagulated blood; diarrhœa, accompanied with violent pains in the abdomen, and tenesmus; frequent attacks of bloody diarrhœa; liquid stools, with tenesmus; violent, bloody diarrhœa, with tenesmus; bloody evacuations.

Urine.—Suppression of urine; scanty, red urine passed with difficulty.

Larynx.—Hoarseness; aphonia.

Chest.—Difficult breathing; shortness of breath; oppression in the chest; excessive dyspnœa; pains in the chest.

Arms.—Coldness in the hands.

Legs.—Pains in the loins and knees, afterwards in the other limbs; icy cold feet.

Ipecacuanha is very useful in the milder cases of cholera, especially when the patients are young. We have seen it apparently arrest the disease in children, but it is of little use in the severer cases.

General symptoms.—Rigid stretching of the whole body.

Sleep.—Drowsiness; starting during sleep.

Fever.—Chilliness; his body feels cold; hands and feet icy cold, and dropping with cold sweat.

Head.—Vertigo.

Eyes.—Red, inflamed eyes.

Face.—Pale face, with blue margins around the eyes, and great weakness as after a long and severe illness.

Stomach.—Nausea; nausea, with heaviness in the abdomen; vomiting of ingesta; vomiting of large quantities of mucus; vomiting green mucus; excessive sick feeling in the region of the stomach; horrid pains in the stomach.

Abdomen.—Uneasiness in the abdomen; griping, pinching in the abdomen, as if one were grasping with the hands the intestines; cutting pain around the umbilicus.

Fæces.—Green stools; diarrhœic stools; fœtid stools; bloody stools.

Urine.—Scanty emission, with frequent desire to urinate.

Chest.—Contraction of the chest, with short, panting breathing; palpitation of the heart.

Extremities.—Cramp pain during motion between the scapulæ; weariness of the lower limbs; twitching and creeping in the gastrocnemic muscles, as when a limb has gone to sleep.

Chamomilla.—The same remark applies to this medicine as to the preceding one. It is only suited for the milder cases, and is particularly well adapted for children.

General symptoms.—Weakness of the hands and feet; heaviness in all the limbs; general stiffness for a short period; fainting fits; convulsive and epileptic fits.

Sleep.—Starting in the sleep.

Fever.—Chilliness; internal heat, with shuddering.

Moral symptoms.—Repeated attacks of anguish; excessive restlessness; anxious agonizing tossing about, with tearing pains in the abdomen; crying and howling; he inclines to start.

Head.—Vertigo; when rising, headach; tearing pain in the forehead.

Eyes.—Obscuration of sight.

Ears.—Humming in the ears and dulness of hearing.

Face.—Frequent changes of colour; convulsive movements and twitchings of the facial muscles and lips.

Mouth.—Putrid smell from the mouth; dry mouth and tongue with thirst; red tongue.

Throat.—Pain in the throat increased by movement and deglutition.

Appetite.—Unquenchable thirst and dry tongue.

Stomach.—Frequent hiccough; inclination to vomit; inclination to vomit as if one would faint; vomiting of ingesta; oppression at the stomach.

Abdomen.—Aching pain above the umbilicus; flatulence; compressive pain in the abdomen.

Fæces.—Diarrhœa.

Urine.—Urine is hot.

Chest.—Oppression in the chest; crampy pain in the chest.

Trunk.—Stinging pain in the back.

Arms.—Hands are cold; cold hands, with cold sweat in the palms of the hands.

Legs.—Drawing pain in the limbs; cramps in the calves; cramp-like contraction in the toes, with tearing pains in the limbs.

We have now finished the list of medicines which have been found useful in the second and third stage of cholera, and we should proceed to speak of the treatment of the consecutive fever. Before doing so, however, we may make a few remarks about the repetition of the dose, and the length of time for which a remedy should be persevered in.

It is quite obvious that different medicines require a different length of time for manifesting their effects. A medicine given to cure a spasm may be useful in a few

minutes, but not so a medicine which is suited to counteract a morbid state of the blood. Hence what we should call the intercurrent remedies given to relieve some special group of symptoms, should not be so long continued as the radical remedies, unless they mitigate the symptoms for which they are given. The frequency of the repetition of the dose must depend much upon circumstances. As a general rule we repeat it very frequently every ten minutes or quarter of an hour at first, and gradually prolong the intervals. But we do not think it is possible to lay down any rules upon the subject, and much must be left to the tact and judgment of the practitioner; for there are no two cases altogether alike.

In regard to the treatment of the typhus fever which sometimes succeeds cholera, we are thankful to say we have had very little experience, and we do not believe that when the disease is treated according to the homœopathic system, that it will be found at all a frequent consequence. The medicines most recommended in it are *Rhus toxicodendron*, *Bryonia*, *Belladonna*, *Aconite*, *Arsenicum*, we should also add *Helleborus niger*, *Cantharides*, and *Lachesis*. But we believe that, like typhus fever, it will be found a very intractable complaint, and that it is very difficult to form a decided opinion of the efficacy of any particular medicines. The good which remedies effect is necessarily slow in its operation, and it is hard to say how much is due to the natural course of the disease towards a favourable termination, and how much to the curative action of the medicines we administer. It may possibly be necessary to give stimulants in this stage, such as brandy and water or wine. This must be left to the discretion of the practitioner.

CHAPTER VI.

IN EDINBURGH.

All that now remains for us to do is to give an account of the progress of the disease in Edinburgh, the circumstances by which it was attended, and the measures taken by the local authorities and the Homœopathic body to meet the emergency. A rumour prevailed about the end of September of some cases of true Asiatic cholera having occurred in Leith, but it was not till the 2d of October 1848, that an official report of the existence of the disease in this city was made to the civic authorities, and brought under the notice of the Town Council. The fact was formally announced in the Newspapers, and a sort of Board of Health was formed, of which the Lord Provost was a member. Nothing more was done by them at that time. We now thought it was time to take measures for encountering the disease, and accordingly at a meeting of the Committee of the Homœopathic Dispensary, it was resolved that we should open that Institution day and night, and that a medical officer should be continually in attendance, to receive intimation of any person ill of cholera who wished to be visited by us.

It was obviously of no use opening our doors, and sitting at the Dispensary, unless the poor people were made aware of the fact; accordingly, hand-bills were posted about the town, especially about those places where the disease was reported to have appeared, stating that medical aid could be obtained by any person attacked by cholera, by sending to the Homœopathic Dispensary. This was done upon Satur-

day night. On the following day we were sent for in the afternoon to see our first case. The poor woman was far gone when we arrived, and the persons about her told us that they did not know where to go for assistance, until a neighbour, who had read one of our hand-bills, informed them of our being ready to attend at all hours, and then they came for us. Had it not been for us she would have died without medical attendance altogether—like a dog—unless, indeed, the appearance of the medical officer attached to the Police Office, within two hours of her death, could be called medical attendance. He came to certify the case—to be sure that it was really cholera, that he might report it to the Town Council; and we suppose he did his duty. On the following morning we were rather surprised to find all our hand-bills torn down, and to be told it was done by order of the Lord Provost, and that the man employed by us to put them up had been taken into custody. The Secretary was immediately requested to communicate with his Lordship, and ascertain whether such was the fact, and if so, what was the reason of a proceeding which seemed to us most strange. His Lordship* admitted the fact, and gave as his reason, that it was the opinion of himself and some other gentlemen, who had tried to form a Board of Health, that our hand-bills were calculated to frighten people, and therefore were not to be allowed. On being expostulated with as to the unreasonableness and cruelty of such a step, and that it exceeded the powers of the Police, he replied, "That the Police were omnipotent." It is a pity he had not given them orders to arrest the cholera in that case. Of course we had nothing for it but to acquiesce in his absolute wisdom—although it did seem rather strange that his Lordship should show so much tenderness for the fears of the poor as to prefer allow-

* The predecessor of the present Provost.

ing them to die of cholera rather than alarming them by mentioning the word in their hearing;—and it did not seem altogether consistent to allow the Town Council to discuss and make frequent mention of the ominous subject, and to permit what was said about it to be published in all the Newspapers of the place. Was there no danger of that giving alarm?

Although for a considerable time—some weeks—no efficient steps were taken by the city authorities for giving medical aid, yet from the first there was a sort of attempt made to obtain a report of all the cholera cases, which were daily published in the papers. This was first done by the police and Town Council, who sent their emissaries wherever a case of cholera was reported to be, to ascertain the fact, and certify it, as it was called. Accordingly, we thought it right to send a daily return of our cases to the Lord Provost, as it seemed his wish to obtain all information, whether he gave any to others or not. We did this for some time, until we found that these police emissaries, or persons calling themselves so, were using their endeavours to deter our patients from continuing under our charge, by speaking contemptuously of the medicines we gave them, and even by threatening them with the loss of certain benefits which the town was to give to the poor people, unless they employed the parish doctor. After this we resolved to make no more returns, except to the Board of Health at London, to which body we accordingly sent a full report of every case of cholera which was treated by us, and we may give the following acknowledgment of their receipt, by the Secretary of the Board:—

"*The General Board of Health.*

GWYDYR HOUSE, WHITEHALL,
24th February, 1849.

"SIR,—I am directed by the General Board of Health to

acknowledge the receipt of your letter of the 23d instant, with the reports of cases of cholera forwarded therewith; and I am to convey the thanks of the Board to the Physicians of the Edinburgh Homœopathic Dispensary, for the valuable information contained in those Reports.—I am, Sir, your most obedient Servant,

ALEX. BAIN, *Asst. Secretary.*

To G. Atkin, Esq., M.D.,
Homœopathic Dispensary, 5, James' Square, Edinburgh.

Although, as we before said, the cholera appeared about the beginning of October, it was not till the 18th that there was a daily report of the number of cases sent to London. The disease, although it still exists among us, and has broken out in a neighbouring village with great virulence, may be said to have ceased as an epidemic by the end of December: so that its course is included in the months of October, November, and December. The following tables show, first, the weather of these three months in the year 1847 when there was no cholera, then the weather of the three months of 1848 when the cholera prevailed, and the number of cases each day from the 18th of October to the 1st of January 1849. We are indebted to Mr. Adie, the distinguished optician, the well-known inventor of the Symphisometer, for the weather tables, and the most perfect reliance may be placed on their accuracy; and we are indebted to Mr. Bain, Secretary to the Board of Health, for the daily returns of cases of cholera. We shall not attempt to draw any conclusions whatever from this table, but publish it in the hope that similar records may be kept in all places where cholera prevails. We should advise that in addition to the particulars we have given of the weather, the dew-point should be noted, and also the state of the atmospheric electricity.

TABLE FOR OCTOBER 1847 AND 1848.

1847.	Thermometer.				Barometer.				1848.	Thermometer.				Barometer.				Attacks.
October.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	Wind.	October.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	Wind.	
1	51	48	41	55	30.11	30.08	..	E.	1	55	49	51	56	29.24	29.32	..	E.	
2	51	48	45	53	30.06	30.04	..	N.E.	2	55	52	45	60	29.37	29.32	..	S.	
3	48	47	44	53	30.07	30.00	..	W.	3	57	52	50	61	29.35	29.32	..	S.	
4	48	43	43	50	29.86	29.75	..	N.E.	4	62	56	50	62	29.16	29.47	..	S.	
5	43	44	43	46	29.63	29.47	..	E.	5	59	61	53	63	29.60	29.64	..	S.	
6	50	48	42	50	29.44	29.33	0.96	E.	6	63	49	57	64	29.54	29.86	..	S.E.	
7	50	41	45	54	29.31	29.25	0.86	E.	7	57	54	45	60	29.82	29.74	0.64	S.W.	
8	50	49	36	53	29.36	29.52	..	E.	8	57	50	50	61	29.57	29.60	..	S.W.	
9	50	50	42	58	29.52	29.42	..	S.	9	54	48	49	59	29.46	29.22	..	S.W	
10	50	56	46	58	29.42	29.48	..	S.E.	10	52	49	45	56	29.42	29.20	..	N.	
11	63	54	52	68	29.48	29.48	..	E.	11	52	41	44	54	29.78	29.80	..	N.	
12	52	48	49	58	29.48	29.80	..	E.	12	48	48	39	53	29.85	29.94	0.05	N.W.	
13	50	46	47	58	29.80	29.80	0.30	N.E.	13	48	46	43	49	30.09	30.13	..	E.	
14	48	44	45	48	29.80	29.60	..	N.E.	14	49	47	42	50	30.13	30.04	..	N.E.	
15	52	47	44	53	29.68	29.78	..	N.E.	15	46	48	42	46	29.94	29.79	0.49	E.	
16	52	41	43	56	29.78	29.78	..	W.	16	47	43	44	48	29.76	29.82	0.93	N.E.	
17	51	50	36	61	29.58	29.58	..	S.W.	17	40	32	37	47	29.87	29.75	..	N. Red Aurora.	
18	56	54	51	58	29.24	29.04	..	S.W.	18	36	34	30	39	29.69	29.68	..	N.E.	16
19	58	45	51	62	28.90	28.20	..	W.	19	40	35	32	45	29.74	29.75	..	N.	16
20	49	44	39	60	29.25	29.25	..	W.	20	38	32	28	45	29.85	29.82	..	E.	8
21	45	46	37	53	29.30	29.54	0.49	W.	21	38	42	29	46	29.68	29.53	..	W.	7
22	54	53	41	59	29.42	29.02	..	S.W.	22	43	49	37	48	29.38	29.14	..	S.W.	15
23	50	41	42	54	29.16	29.10	..	N.W.	23	45	43	38	47	29.12	29.10	.05	E.	22
24	41	40	35	48	29.10	29.27	0.22	N.W.	24	45	40	37	51	28.88	29.16	1.30	S.	13
25	46	38	36	53	29.56	29.90	..	W.	25	38	36	33	44	29.10	29.24	..	S.	12
26	48	55	34	54	29.90	29.70	..	S.W.	26	47	42	32	53	29.42	29.44	..	S.	15
27	55	49	47	60	29.69	29.94	..	W.	27	48	48	38	53	29.18	28.90	..	S.E.	13
28	50	48	38	59	29.94	29.94	..	W.	28	49	44	37	53	28.92	29.03	..	S.E.	12
29	49	44	43	58	29.94	29.82	9.65	W.	29	42	43	40	50	29.20	29.20	..	S.E.	16
30	51	46	38	54	29.82	29.46	..	E.	30	43	43	38	47	29.38	29.34	1.11	E.	12
31	48	48	44	52	29.77	29.80	..		31	41	41	37	48	29.41	29.40	..	E.	21

TABLE FOR NOVEMBER 1847 AND 1848.

1847.	Thermometer.				Barometer.				1848.	Thermometer.				Barometer.				Attacks.
November.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	Wind.	November.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	Wind.	
1	58	54	46	60	29.74	29.70	..	W.	1	42	43	38	43	29.37	29.39	..	S.E.	21
2	52	45	44	58	29.89	30.10	..	W.	2	41	38	35	48	29.43	29.32	..	S.	21
3	46	43	32	56	30.10	30.00	..	W.	3	37	30	34	48	29.36	29.48	0.92	N.	17
4	49	47	37	54	29.84	29.24	..	E.	4	34	28	27	37	29.48	29.50	..	N.	32
5	52	49	43	57	29.34	29.34	..	E.	5	39	42	27	46	29.23	29.21	..	S.W.	12
6	54	52	43	59	29.50	29.46	..	W.	6	44	34	38	49	29.15	28.99	..	S.W.	49
7	55	57	43	57	29.30	28.92	..	S.W.	7	42	35	32	44	29.35	29.61	..	N.W.	26
8	57	51	50	59	29.92	28.90	0.29	S.W.	8	36	34	29	40	29.86	29.44	..	N.	28
9	49	45	41	55	29.95	29.72	..	W.	9	32	34	25	38	30.17	30.15	..	W.	28
10	53	54	45	59	29.56	29.52	..	W.	10	42	40	31	45	30.26	30.28	..	S.W.	40
11	46	44	38	55	29.70	29.70	0.13	E.	11	41	38	37	45	30.31	30.31	..	S.E.	14
12	42	40	31	49	29.90	29.70	..	N.E.	12	34	35	29	45	30.39	30.31	..	S.E.	7
13	49	48	36	57	29.74	29.74	..	N.W.	13	38	42	31	46	30.19	30.04	..	S.W.	19
14	50	54	44	57	29.74	29.74	..	W.	14	40	38	34	45	30.12	30.19	..	S.	26
15	56	48	52	60	29.70	29.64	..	W.	15	36	41	33	47	30.20	29.78	..	S.	24
16	43	46	42	56	29.78	29.78	..	S.W.	16	46	43	38	48	29.80	29.78	..	S.	11
17	38	35	30	51	29.96	30.20	..	W.	17	46	42	36	49	29.44	29.24	..	S.W.	15
18	38	44	26	44	29.20	29.96	..	W.	18	41	36	38	43	29.02	29.16	..	S	10
19	49	48	40	54	29.94	29.94	..	W.	19	37	45	32	42	29.56	29.32	..	S.W.	12
20	48	46	39	48	29.70	29.52	..	W.	20	53	40	39	53	28.84	28.82	..	S.W.	16
21	49	45	38	57	29.29	28.77	0.20	W.	21	43	41	38	49	28.97	29.13	1.18	E.	11
22	43	45	40	48	29.20	28.70	..	W.	22	40	45	39	44	28.86	28.68	..	E.	11
23	42	40	35	46	29.00	29.39	0.39	W.	23	42	41	37	47	29.06	29.06	0.26	S.E.	6
24	48	41	35	51	29.40	29.42	..	W.	24	36	33	32	42	29.49	29.68	..	S.W.	14
25	50	44	39	54	29.25	29.25	..	W.	25	40	46	30	42	29.50	29.30	..	W.	4
26	42	39	38	51	29.34	28.22	..	W.	26	47	47	39	50	29.25	29.19	..	S.W.	4
27	37	31	30	42	29.16	28.94	..	N.E.	27	46	44	40	49	29.44	29.54	..	S.W.	9
28	32	31	25	37	28.70	29.67	..	N.E.	28	48	53	42	53	29.24	29.06	0.06	S.W.	13
29	36	44	29	43	28 67	29.10	..	N.E.	29	48	41	44	53	29.35	29.25	..	S.W.	5
30	49	39	34	54	29.10	.40	0.13	W.	30	39	40	37	44	29.41	29.31	..	S.W.	17

TABLE FOR DECEMBER 1847 AND 1848.

1847.	Thermometer.				Barometer.				1848.	Thermometer.				Barometer.				Attacks.
December.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	Wind.	December.	Morn.	Even.	Min.	Max.	Morn.	Even.	Rain.	ind.	
1	40	45	34	48	29.70	29.80	..	W.	1	38	39	35	44	29.22	28.61	..	S.W.	12
2	52	51	41	57	29.60	29.58	..	S.W.	2	37	32	34	47	28.57	28.93	..	W.	8
3	45	43	41	56	29.60	29.42	..	W.	3	35	47	31	38	29.20	28.69	..	S.	13
4	43	41	38	55	29.20	28.66	..	W.	4	43	40	37	49	28.60	28.27	1.00	S.	6
5	37	36	35	49	28.64	28.09	..	W.	5	36	34	33	41	28.43	28.70	0.39	S.	2
6	36	38	32	47	28.14	28.14	0.72	E.	6	38	32	31	40	28.74	28.86	..	S.	7
7	36	31	35	44	28.70	28.94	0.43	E.	7	36	33	31	39	29.09	29.30	..	E.	10
8	43	34	27	44	29.10	29.10	..	W.	8	48	47	30	49	29.16	29.49	..	S.	10
9	52	54	31	55	28.57	28.78	..	S.W.	9	47	54	44	54	29.56	29.56	0.39	S.	6
10	42	37	38	57	29.44	29.42	..	W.	10	56	52	51	59	29.66	29.58	..	S.	4
11	40	42	32	48	29.18	29.26	0.80	W.	11	51	49	49	56	29.57	29.73	..	S.	4
12	46	44	37	51	29.44	29.58	..	W.	12	51	54	41	55	29.60	29.42	..	S.	12
13	46	42	38	48	29.58	29.58	..	E.	13	54	53	52	55	29.35	29.47	..	S.	7
14	44	42	38	50	29.60	29.60	..	W.	14	53	49	50	57	29.32	29.27	..	S.	8
15	46	44	39	50	29.46	29.46	..	S.E.	15	44	44	39	52	29.32	28.95	..	E.	13
16	48	42	39	53	29.39	29.26	0.23	S.E.	16	41	39	38	51	29.41	29.43	0.06	S.W.	9
17	48	55	39	51	29.04	28.84	..	S.S.E.	17	40	40	39	40	29.40	29.40	..	W.	9
18	42	39	39	56	29.08	29.08	..	E.	18	39	45	35	42	29.40	29.40	..	W.	7
19	39	37	35	47	29.08	29.39	1.37	W.	19	41	47	39	47	30.54	29.54	..	E.	7
20	37	34	31	41	29.60	29.60	..	E.	20	39	31	35	44	30.06	30.06	..	S.E.	9
21	36	34	30	48	29.46	29.40	..	E.	21	31	27	26	41	30.06	30.06	..	E.	10
22	34	34	32	36	29.56	29.76	..	E.	22	26	39	21	38	30.08	30.08	..	W.	6
23	35	33	31	38	29.54	29.46	..	E.	23	35	36	24	37	29.06	30.00	..	E.	10
24	33	35	25	36	29.88	30.00	..	E.	24	34	35	34	38	29.29	29.60	..	S.E.	2
25	38	39	32	42	30.05	30.05	..	E.	25	40	40	34	47	29.60	29.60	..	S.E.	6
26	39	37	33	42	30.05	30.03	..	E.	26	45	49	38	50	29.50	29.14	..	S.W.	2
27	30	28	25	39	30.00	30.00	..	E.	27	43	32	38	50	29.84	29.84	..	W.	6
28	33	36	24	37	30.00	29.80	..	E.	28	29	29	26	38	29.84	29.84	..	E.	2
29	35	37	30	36	29.46	29.12	0.10	S.E.	29	32	32	25	38	29.84	29.84	..	E.	7
30	35	28	31	39	29.75	29.70	1.23	W.	30	35	34	28	38	29.84	29.84	..	E.	5
31	24	26	21	30	29.70	29.50	..	N.W.	31	33	32	31	35	29.84	29.84	..	E.	2

We believe the best way of giving an accurate idea of our proceedings will be by the following extracts from the Report of the Acting Committee of the Homœopathic Dispensary, and we consider it but justice to those Homœopathic practitioners who devoted themselves to the toilsome, often thankless and perilous duty, that their names should be thus recorded:—

"Whenever the existence of Asiatic cholera in Edinburgh —an event, as appears from your minutes anticipated by you since the 8th November last—had been officially announced, it seemed to your Committee that the time was come for them to use the most prompt and efficient means in their power, at least to alleviate if they might not stay that terrible disease.

"With this view a meeting of your Committee was held on the 7th October current, when it was resolved, after conference with your medical officers, the ordinary physicians of the Dispensary, who generously undertook the very severe duties which the arrangement imposed on them, that the Dispensary should be kept open, and one of the medical officers should be in attendance, at all hours, day and night, during the prevalence of cholera in Edinburgh. It is here to be mentioned that the ordinary physicians, viz.—Dr. Russell, Dr. Wielobycki, Dr. Lyschinski, and Dr. Sutherland, all graduates of our University, have been kindly assisted in these duties by Dr. Atkin of Portobello, who has a similar degree, and Dr. Cockburn, a licentiate of the College of Surgeons of Edinburgh; and when it is considered that the services of these gentlemen are perfectly gratuitous, your Committee feel sure you will accord them your warmest thanks. Arrangements have also recently been made to enable Dr. Cockburn, in the meantime, to be resident in the Dispensary.

"As the only effectual means of giving notice to the class of persons most liable to the disease, that medical aid was to be obtained at the Dispensary at all hours, day and night, bills announcing the fact and urging the importance of instant application, were ordered to be printed and posted at all proper places; and generally, your medical officers were empowered to take whatever steps, such as the employment of nurses, &c., they might think necessary to meet the crisis.

"Your Committee again met on the 14th, when it was stated that there was reason to believe that the bills which your Committee had published had been destroyed by the police, and the person employed to put them up had been apprehended for doing so; and your Secretary was requested to inquire into the matter, and on inquiring, your Secretary learned from the Superintendent of Police, that the bills had been destroyed in terms of orders issued by the Lord Provost. He then wrote the Lord Provost, (October 16th,) to ask whether it was his intention to prevent the publication of such bills as those referred to, and if so, in what respect they were objectionable. His Lordship replied, 'It was the opinion of the gentlemen who met with Dr. Sutherland from the Board of Health, that the placarding of bills about cholera had a pernicious influence by creating alarm in the public mind, and therefore ought to be prevented; in consequence of which opinion,' he 'gave orders to the police to prevent placarding of all such bills.'

"Your Secretary afterwards waited on the Lord Provost on the subject, and finding him still resolved to prevent the publication of these bills, gave orders to have others printed, and put up especially in the Canongate, Cowgate, West Port, and other places in which the cholera had already appeared, containing the same announcement, but not containing the word 'Cholera,' at that time prohibited.

"It will thus be observed that, while the authorities were taking no steps themselves to provide medical aid, and after numerous cases of cholera had occurred in Edinburgh, they still persisted in offering obstructions to your Committee, *who were then anticipating the steps which have been so much more tardily taken by the parochial authorities, acting in obedience to the orders of the General Board of Health.*

"Of all the cases which have come under the notice of your medical officers, there is no reason to believe that any one has originated in 'alarm' or 'panic;' on the contrary, it has been observed by them that the patients have in general been rather too indifferent than too anxious.

"In terms of the announcement thus made public, the Dispensary has been open at all hours, day and night, since the 9th current; your medical officers, and the other two gentlemen who are acting with them—six in all—having arranged to relieve each other every twelve hours, at 9 A.M. and 9 P.M.

"It may be here stated, that the Lord Provost having published an advertisement requesting daily returns of all cases of cholera that should occur in Edinburgh, your Secretary, on the 23d October, sent his Lordship a report of the cases that had already occurred, at the same time writing to inform his Lordship what steps had been taken by your Committee, and has since made a daily return corresponding with that which has just been read."*

The Second Report takes up the subject at the point where it is left off in the First.

"The general arrangements which were made on the first incursion of cholera, continued in operation at the dispensary during the whole of its course, and the most effectual means were used to give public notice that medical assistance was

* Report, October 8 to October 27, 1848.

to be obtained there at all hours, by the posting of hand-bills, and by circulars addressed to those frequenting the dwellings of the poor. That these measures were much needed, and quite successful, appears in the very large proportion treated by the physicians of the dispensary, being more than one-fourth of the whole cases of cholera reported to the General Board of Health as having occurred in Edinburgh and Leith.

"The *first* case occurred on the 8th October, the *last* on the 11th February; the disease having continued in Edinburgh rather more than four months. It reached its *maximum* about the beginning of December—the greatest number of new cases in any one week ending December 3d, and being thirty-four; after which time the number of cases decreased rapidly, and during the last week of January only three new cases were reported. Not more than one or two stray cases occurred afterwards. The following table shows the progress of the disease:—

TABLE OF THE NUMBER OF CASES AND RESULTS EACH WEEK.

Week ending	Remaining.	New.	Total.	Recoveries.	Deaths.
October 15.	...	19	19	8	5
... 22.....	6	25	31	18	4
... 29...	9	15	24	10	7
November 5.....	7	19	26	11	6
... 12.....	9	12	21	12	2
... 19.....	7	25	32	15	7
... 26.....	10	23	33	17	5
December 3.....	11	34	45	22	7
... 10.....	16	20	36	22	7
... 17.....	7	14	21	10	1
... 24.....	10	8	18	11	1
... 31.	6	4	10	8	1
January 7.....	1	5	6	1	...
... 14.....	5	4	9	6	2
... 21.....	1	5	6	3	2
... 28.....	1	3	4	1	...
February 4.....	3	...	3	3	...
... 11..... ..	...	1	1	...	...
... 18.....	1	...	1	1	...

patients, not only relieved their sufferings and promoted their recovery, but in so great measure lessened the anxieties of their medical attendants, who have frequently and warmly expressed their thanks for this kindness. There remains as the fruit of these labours, not only the good which has been already experienced in the cure of the sick, but a large provision for future use in the valuable details of all the cases, which have been carefully collected and preserved in the cholera books of the Dispensary."

We believe that in all the circumstances of the case, these arrangements were the best possible, and if the cholera spreads over England this year, as there is a great probability of its doing, we should recommend similar measures to be taken in all places where Homœopathic aid is attainable. Above all, in London this should be done, and we trust that if the Metropolis be visited with the scourge, that the British Homœopathic Association will show itself alive to the crisis, and take the most energetic steps to establish temporary dispensaries in all localities where the disease appears. All that is required to be done is to engage a couple of rooms, to post up bills announcing the fact, and to secure the assistance of one or two Homœopathic physicians, who should have a sum of money placed at their disposal, to pay for nurses to be left with patients and superintend the treatment ; and if possible at each dispensary there should be a resident medical officer. We cannot for a moment suppose that the wealthy and generous capital of our empire will refuse an ample fund for all these purposes. The good which may be done by it is literally *incalculable,* and if the friends of the cause come forward in the handsome way they did here, let it never be said that the Homœopathic physicians drew back ! Surely at such an emergency, when the lives of so many are at stake, it would be most unworthy of any man

who really believes that he can save his fellow-creatures by administering Homœopathic medicine, not to make his actions a confession of his faith. We can only say for our own part, that although the attendance upon the poor afflicted with cholera in Edinburgh was no easy or pleasant task, yet it is one we should have been ashamed to have evaded, and one which has given us more real gratification than any professional duty we have ever engaged in. It is not so often that the chance occurs of being able to rescue life from instant destruction ; and the pleasure derived from the deed far out-weighs all the sacrifices required in the doing of it. Let us hope then, and trust, that as when the news of the disastrous field of Flodden came here centuries ago, it united all the inhabitants of our ancient town to resolute, united action, by which the wall which still in part is standing was built, men working with the sword by their side, helping one another in this lasting memorial of the indomitable character of our nation ; so this great crisis may unite all those who believe in the doctrines of Hahnemann, to make an effort worthy of his memory, worthy of a far more glorious vocation, which is no less than being fellow-workers with Him who gives ear to the "sighing of the prisoner," and " preserves those that are appointed to die."

APPENDIX.

CASES TREATED AT THE HOMŒOPATHIC DISPENSARY, EDINBURGH, IN 1848-49.

I have selected the following cases for publication rather to illustrate the varieties of the disease, and the corresponding treatment, than for the brilliancy of the results. At the same time I believe that on the whole our success has been as great as that of other Homœopathic practitioners; and I do not feel at all called upon to apologize to those who, having themselves never seen or treated a case of cholera, have criticised our treatment, and represented our mortality as greater than we ought to have had in the circumstances. To all such objectors we reply, that we are fully aware of the faults we have committed; and should the cholera return, we hope to be more successful; but that hitherto there were almost no cases of cholera treated homœopathically upon record, and it is only those who have had to do with the disease who can form an adequate idea of its virulence, or of the difficulties attending its successful treatment. Of course I do not hold myself personally responsible for the accuracy of all the Reports. Each of us had his own patients, and we did not interfere with one another more than necessary. It was my habit, as well as that of some of my colleagues, to make notes at the bedside of the patient after every visit, and to copy those notes into the book kept for the purpose at the Dispensary; and I should strongly advise that this method be followed by all who may have anything to do with the treatment of the epidemic. Those who did not take notes at the bedside of the patient made their report on their return to the Dispensary; and

we have no doubt that on the whole the reports are more faithful than the ordinary history of cases, except those which occur in hospitals, where accuracy is much more easily attained.

In making out our returns of cholera cases we have used our best endeavour to enter none as cholera which did not present the most unequivocal symptoms of the complaint. We need hardly observe that there is considerable liability to error in this matter; and we may have entered as cholera, cases which others would not have looked upon as presenting sufficiently characteristic symptoms of the complaint. Before we made up our final list from which the mortality is taken, we did all we could to purge our book of all dubious cases, and reduced the number from 365 to 236.

We have arranged the cases in the following order:—*First*, Those which were fatal in the second and third stage of the disease. *Second*, Those which rallied from the state of true cholera and afterwards sunk in the typhoid state. *Third*, Cases of recovery from the first invasion of the disease. *Fourth*, Recovery after it had been fully formed. And *Fifth*, Recovery from the typhoid state.

FATAL CASES.

Case I.

The first case of cholera, which was treated homœopathically towards the end of the attack, was that of A. M., an Irish married woman, who came from Glasgow three days before, (the 5th of October,) to take refuge in the house of her sister, living in the second floor of a crowded, filthy locality in the West Port. She was shocked to find that her sister had died the same day of cholera, and the husband of the defunct died of it two days afterwards, and was lying unburied in an adjoining dark, small room. Our patient's age was 25, she was of fair complexion, small stature, slender, delicate, and exhausted by nursing her child eighteen months old, and by want of food for the last three or four days, her husband having been out of work for some weeks. She was taken ill at about four o'clock on Sunday morning (the 8th of October) with purging and vomiting, got rapidly weak, could not stand nor sit up from vertigo and noise in the ears; took whisky repeatedly and vomited it; was very thirsty, took beer, water, and vomited everything she drank;

took also four opium pills between eight and nine o'clock, which had been left by an ordinary practitioner for her sister and brother-in-law before their deaths; but the vomiting and purging, with pains and cramps in the legs, at last became alarming. Some of her neighbours, formerly patients of our Dispensary, having observed the notices of our Dispensary being open at all hours, day and night, for receiving application for medical aid during the prevalence of cholera, sent there, and after breaking open the door, which had been locked by her cousin while she went for the Parish Surgeon, she was seen first about half-past eleven, A.M., and found in the utmost destitution and poverty, without any covering or fuel, and she was then in a state of collapse; pulseless, cold and deaf; lying prostrated on the same dirty bed, which bore the marks of the alvine evacuations ejected by the former two patients, who died upon it of cholera before her; and a naked child, eighteen months of age, was at the right breast greedily sucking her insensible mother, who was in a stupor from the effects of opium; but she was soon roused by the cramps, which starting from the extremities towards the abdomen, were relieved by vomiting a large quantity of watery, whitish, flocculent liquid, which ran over the head and face of the infant; after vomiting she had hiccough, and drank a large quantity of cold water, which made her sick and vomit again in gushes, and the vomited watery liquid was in a much larger quantity than what she drank; voice husky.

Camph. every five or ten minutes.

In the meantime, by threatenings and by force, some blankets were procured from the neighbours, the fire kindled, and hot sand and hot bricks applied round her, and the child sent to the Charity Workhouse. The cramps were greatly allayed; they became less intense and less frequent; they came on every twenty and thirty minutes, chiefly in the feet and in the left leg and the left arm; the gastrocnemii and the sartorii were most violently cramped when she attempted to change her position. The cramps, the leaden coldness and blueness of the extremities, the pulselessness at the wrists, with bluish, cold, and flabby tongue and lips, the cold breath, and the dark circles around the sunken, half-open, and turned up eyes, continued for more than an hour, during which she vomited three times the same clear watery flocculent fluid, with a frothy liquid at the close of each vomiting and a hiccough. She said also, that a gush of

watery, scalding discharge came from her bowels almost each time she vomited, and that she could not make water.

Ars. 3, every quarter of an hour.

She had no cramps for about half an hour, was also warm and perspired profusely under the blankets; the perspiration on the trunk was warm, and on the face and extremities cold; pulse perceptible, 140 in a minute, weak; the livid hue was gone; the lips, tongue, and fingers became whitish, pale, ensanguined, and warm, her voice firmer, louder, and clearer; her breathing easy, 28 times in a minute; but she was still very thirsty. On the whole the case had an appearance of being likely to terminate favourably; even when the Police Surgeon inquired, (about half-past two o'clock,) the pulse was then ranging between 120 and 140, and she had no cramps nor vomiting nor purging for nearly two hours; but this favourable state was short-lived, slight cramps recurred a little before four o'clock, they were chiefly in the thorax, with oppression in breathing, and the pulse began to falter.

Cuprum 3, dry on the tongue.

At her own request she got a little gruel, which she vomited; became more thirsty and very restless; very anxious to get up, flung about her arms from breathlessness, which gradually became more and more oppressive, and made her cry repeatedly, "I am dying!" the pulse became again completely extinct; at half-past four, P.M., respirations from 32 to 38 in a minute, sonorous, laborious, with sighing, gasping, and an exclamation, "I cannot have ease in this world!" The face, lips, and the whole body got cold like ice again; hands and legs paralytic; she became restless, speechless, and could not swallow anything after some brandy and water was given to her; lying insensible; the fingers crooked, their integuments shrivelled, corrugated; the nails dark blue, and the breathing, interrupted by gasping or risus sardonicus, followed by a few futile gasps for breath, which were the last of her poor exhausted life. After death, which took place a little before five o'clock, P.M., that is, after thirteen hours' illness, the whole body became warm again, and a few post-mortem contractions took place before it cooled.

Case II.

M. S., a woman aged 30, living in a miserable, filthy, crowded room, a notorious drunkard, who had been drunk the previous day

and night, was seized at four o'clock on the morning of the 10th of October, with cramps in the stomach and limbs, and purging and vomiting. She had taken two opium pills of three grains in each. Her friends having heard of our Dispensary being open, and not knowing where else to find a doctor, sent there about eight o'clock. When seen she was cold, pulse imperceptible; there was violent vomiting. She got Camphor, and afterwards Veratrum, Arsenicum, Ipecac., and Cuprum. At one o'clock the pulse was perceptible, and there was no vomiting nor purging. She seemed a little better. She sunk rapidly, and died at five o'clock, P.M., without the least struggle. So complete was the collapse, that it was impossible to say for some time whether she was dead or living.

Case III.

A woman, aged 33, has been for many years, especially the last two, very intemperate. Was drinking to excess on Monday, and to some extent for the two succeeding days. Four months pregnant. Wretchedly poor, lying on a piece of cloth on the floor, and naked, covered merely with a tattered gown. Was seized at five last night with vomiting and purging. Had taken porridge for supper, which was returned; the evacuations at first watery, latterly described as bloody. Since morning evacuations less frequent. Cramps began about seven last night, and were very severe all night; abated since morning. Seen at noon of the 12th of October. Skin of the whole body cold and clammy, the hands and face blue, the features contracted and sharpened, eyes deeply sunk; eyes and mouth surrounded with blue circles; tongue and roof of mouth cold, the former covered with yellowish fur, felt flabby like a piece of raw meat; breath cold; no pulsation could be detected at the wrist, temporal artery, or heart; breathing regular; complained of pain in epigastrium, increased on pressure, great thirst; oppression of the chest; throwing off the covering, complained of its weight; vomited about half an hour after she was seen, clear water, without smell, and apparently unmixed with mucus; evacuations from the bowels at intervals of half an hour, of a dusky red watery fluid, containing brown and white flocculi; was sensible when bowels were moved, and complained of some heat in ano; no urine passed since the previous evening. Sensible when spoken to, but wandering at times, and talking indistinctly; voice hoarse.

Verat. 3, and Ars. 3.

Medicines repeated at intervals of twenty minutes, hot bricks applied round the body, and arms and legs chafed.

Had three stools, and then an intermission of about three hours. Skin of the extremities slightly warmer, but temperature of the mouth unchanged; restless, and complaining of great oppression at the heart, exclaiming it was bursting, and begging the weight to be taken off her chest; the cramps gradually diminished in strength and frequency. The voice varied much, at one time being clear and distinct, at another hoarse and husky; the blueness of the hands and face diminished, and the eye increased in clearness; the pain in the stomach not felt.

Continue Verat. and Ars.

At half-past two, took a tablespoonful of thin gruel, which was retained. At three, a stool, the same character; complaining much of chest and heart oppression. At half-past three, asked for more gruel, which she drank greedily, and the temperature of the thighs and surface of the abdomen sensibly increased; no pain on pressure in the latter; sleeping at times for a few minutes. At a quarter to four, the respiration became suddenly oppressed and laborious, chest heaving, and at four she died.

An interval of a few minutes from the respiration ceasing, there were movements of the right shoulder, it was three or four times twitched forward; there was no struggle or convulsion, the respiration ceasing gradually. The stools and the water vomited had no smell.

The house was most wretched, several openings through the roof, the window stuffed with pieces of cloth, the floor very defective, with an oppressive smell arising through it. The husband had been drinking, he went out a little before the wife's death and returned scarcely able to stand.

Case IV.

P. M., aged 46, a man of intemperate habits, living in a close room, with several other persons of both sexes, in a filthy lane off the Grassmarket, had been in his usual health, *and had no diarrhœa till five o'clock*, A.M. of the 20th of October, when he was suddenly seized with vomiting and purging. When seen for the first time at ten, A.M., we found him out of bed, standing almost naked on the

floor; he said he had risen on account of the violence of the cramps. The surface of the body was quite cold, the tongue cold, the pulse could not be felt, the toes were quite turned in by the cramps, and he complained much of the violent pain in his legs. He was vomiting and purging a watery fluid.

He died at a quarter before ten, P.M., seventeen hours after seizure, and twelve hours after first visit.

Case V.

R. A., aged 22, a man of sober, industrious habits, living in a comfortable room, *without feeling unwell,* took a dose of salts and senna as a precautionary measure, on the morning of the 22d of October, which operated in the course of the day. At four, P.M., he was seized with vomiting, purging, and cramps. When seen at half-past seven, P.M., the surface of the body was cold and dark-blue in colour; the pulse was felt like the finest thread; the jaw was hanging, and the eyes open, glassy, and turned up; the tongue and breath were icy cold; the voice a hollow whisper; there was great thirst, watery vomiting and purging, and violent cramps in legs and arms.

He died at half-past one, A.M., of the following morning, nine hours and a half after seizure, and six hours after first visit.

Case VI.

R. A., aged 30, a man of intemperate habits, who had been drinking whisky the previous day, but otherwise in his usual health. He was seized with vomiting and purging and cramps about midnight of the 24th of October, and when seen at five o'clock the next morning, he was found standing on the floor roaring with pain. His face was pale and anxious; his lips and breath were quite cold; no pulse could be felt, and he could not move from where he stood from the violence of the cramps. Alvine evacuations watery, what he vomited was tinged with blood.

Camphor to smell, and afterwards Arsenicum, 3rd dil.,
frequently repeated.

Half-past eight, A.M.—Profuse warm perspiration over the whole body; no vomiting or purging; slight cramps; urine suppressed; great thirst; pulse barely perceptible.

Eleven, A.M.—Countenance cadaverous; very breathless; moan-

ing from pain. Sunk and died at half-past one, P.M., twenty-five hours ill, and twenty hours under treatment.

Case VII.

J. M., aged 34. He was seen at nine, A.M., of the 26th, and he was then cold, blue, and pulseless. Complained of cramps in the stomach; there was ineffectual desire to relieve the bowels.

Hydrocyanic Acid, 1st dil., a dose every five minutes.

He got this for half an hour without any perceptible change, and afterwards Arsen. 3d dil., every quarter of an hour. He sunk gradually and rapidly, and died at twelve o'clock the same day. Only three hours under treatment.

Case VIII.

Mrs. M., aged 45, had been in good health till last night, when she was affected with diarrhœa; at six o'clock of the 29th October, she was attacked with watery vomiting and purging, and cramps in the limbs. She was first seen at half-past eleven, A.M., of the same day, and we found her face sunken, her hands and nails blue and shrivelled; the pulse could not be felt; the voice was barely audible; the tongue and breath were quite cold.

Camphor every five minutes.

Half-past one.—No better.

Arsen., 3d dil., half-hourly.

Half-past ten, P.M.—No better.

Hydrocyanic Acid, 2d dil., every ten minutes.

October 28th, half-past three, A.M.—No better. Continue medicine.

Eight, A.M.—Tongue warmer; no pulse; great thirst; no vomiting for some hours; no purging for one hour; complains much of pain in abdomen.

Oxalic Acid, 3d dil., a dose half-hourly.

Half-past one, P.M.—One stool since last report; no pulse; great pain in the abdomen; tongue cold.

Arsen., 3d dil.

Half-past eight, P.M.—Low muttering delirium; no pulse; quite cold; cannot be roused by speaking to her; no vomiting; two stools since last report. Died at half-past nine, P.M.

Case IX.

E. M., aged 40, a woman of intemperate habits, and who had been drinking much the last few days, was for three days ill of diarrhœa and pain in the side, which had confined her to bed for two days. When seen for the first time, at half-past nine o'clock, P.M., on the 27th October, she was found covered with cold, clammy perspiration; the pulse was imperceptible; she complained much of oppression and of heat, and vomited everything she took; she had also watery purging. The tongue was cold, with a white fur upon it; the eyes half-open and turned up. Had been treated by an Allopath up to the hour of our visit, who had given pills, and creosote, and brandy.

Hydrocyanic Acid, 2d dil., a dose every quarter of an hour.

Half-past ten, P.M.—No vomiting; no other change.

Arsen., 3d dil.

Died at half-past eleven. Two hours under our treatment.

Case X.

Mrs. F., aged 46, went to bed in her usual health between nine and ten, P.M., on the 29th of October; felt pain in the head and chilly during the night, and especially between three and four o'clock the following morning, when the bowels were copiously moved, and she began to vomit with each evacuation of the bowels, which occurred every eight or ten minutes; had also cramps in the legs and pain at epigastrium. When seen first, a little after six o'clock of the same morning, her face was cold and ghastly, and had a peculiarly melancholy expression; she frequently repeated the words, "What is with me? I cannot live, I cannot live." She was very restless; the pulse languid and intermittent, and the skin ice cold; she complained of pain in the loins.

Secale, 1st dil., every five minutes.

After a little time she was violently cramped in the fingers and toes. She then got Camphor, repeated at short intervals. There was no vomiting for quarter of an hour; pulse became more languid, 76 in a minute, scarcely perceptible; vomited and purged twice during the next quarter of an hour; very restless; sighing and panting for want of breath.

She then got Arsen., 3d dil.

Quarter past seven, A.M.—Pulse gone; cold, clammy perspira-

tion; vomiting of a pale-white watery liquid, with gurgling in the throat.

Carbo. veg., 3d trit., alternately with Ipecac., 3d dil.

Nine, A.M.—Collapse continues. Vomited once, and bowels not open; fits of excessive restlessness, and cramps occasionally in the fingers and toes. Continue medicine.

Twelve, noon.—Much the same; no vomiting or purging; great thirst; flying pains through the body.

Pulsat., 3d dil.

Three, P.M.—No change. Voice became a whisper. Her words were, "There will never be case for me in this world."

Eight, P.M.—Has been quiet and speechless from five, P.M. Is quite insensible. Bowels twice opened. Died at half-past eight, P.M., of the 30th.

CASE XI.

Mrs. G., aged 66, had been slightly unwell the previous week, and in attendance upon a person ill of cholera on the previous day. She was taken ill early in the morning of the 11th of November, with violent purging of watery fluid, and afterwards with vomiting; had taken brandy without any relief. We saw her for the first time at half-past eight, P.M., of the same day. Her face was pale, and had a peculiar expression. She was very languid, and spoke little; the pulse was 100, feeble; the tongue white and clammy. She had passed very little urine during the day; she complained of cramps in the legs.

Iatropha Curcas, 3d dil., a dose every hour.

October, 12th, ten, A.M.—She was cold; pulse very weak, 68 in the minute; had passed no urine; vomited incessantly. Tongue white and cold.

Arsen., 3d dil., a dose every half-hour.

12th, half-past two, P.M.—She was warmer; there had been less vomiting and purging. She was said to have passed urine. Continue medicine.

Nine, P.M.—Very little purging and vomiting; tongue cold; pulse 60, very small and feeble. The hands are dark-blue. Great thirst. Continue medicine.

13th, six, A.M.—The medicine had not been given, but she got porter, and whisky and hot water, and had been altogether neglected. She died in the course of the day.

Case XII.

Mrs. G., October 22.—The mother of this patient (Case XI.) died of cholera. We found this woman, her brother, a lad of 17 years old, and two children, lying on a miserable shake-down on the floor. She vomited this afternoon, but felt quite well when she went to bed. About half-past eleven she was seized with sickness and purging, dejections coming from her in a watery stream. There was much pain in back, and dry retching. She had made water about half-an hour before. Surface of body warm; hands and face cold and clammy; tongue cold, breath warm; pulse indistinct; great anxiety—often begged us not to leave her. Cramps in the leg. Was seen at twelve, P.M.

Camphor, a dose every ten minutes.

15th, half-past twelve, A.M.—Pulse more easily felt; dry retching; much thirst. Quarter to one.—Cramps returning more severely; purging more urgent; great thirst. Temperature of the body as before.

Arsen., 3d dil., and Verat., 3d dil.,
alternately every quarter of an hour.

Seven, A.M.—Constant purging and vomiting all night. Complains of pain and oppression at heart. Pulse imperceptible; surface cold; tongue warm, voice hoarse; weight at heart.

Continue Arsen. and Verat.

Nine, A.M.—No pulse; very cold; vomiting and purging clear water; great heaving of the chest. Expects death. Continue medicine.

Half-past twelve, A.M.—No pulse; great oppression at the heart and chest. No purging; urinated a little two hours ago. Less vomiting; hands and feet very cold. Continue medicine.

Three, P.M.—No pulse; no vomiting nor purging; great oppression of chest; very livid.

Hydrocyanic Acid, 1st dil.

Seven, P.M.—Found that the patient died at four, P.M.

Case XIII.

Mrs. N., aged 33, was in attendance upon a person who died of cholera, and assisted to dress the body. She was quite well up to eight o'clock, P.M., of the 19th of November. We saw her first at nine, P.M., of the same day, and found her sitting by the fire, and she

said she could not lie in bed owing to the pain in the bowels. She had been vomiting and purging for an hour. The skin was hot; the pulse rapid and full; the tongue cool. Complained of great thirst; passed urine in the evening. Face flushed; has drunk some whisky. The stools are thin and bilious.

Camphor, to be followed by Merc., solub. 3d.

19th, half-past eleven, P.M.—Vomiting and purging continue; surface of the body becoming cold.

Veratrum, 3d dil., every quarter of an hour.

20th, half-past one, A.M.—Surface cold; face and hands livid; purging clear watery fluid, with white flocculi; grinding of the teeth; pulse scarcely perceptible.

Veratr., 3d, and Arsen., 3d dil., alternately.

Half-past six, A.M.—Vomited and purged once since last visit. Skin cold; eyes turned up. Complains of pain in chest; respiration 30 in a minute. Some attacks of hiccough, and spasmodic catching of the breath; she rubs the chest with her hands. There are no cramps; the tongue, lips, and breath are very cold.

Cicuta Viros., 3d dil., and Arsen., 3d dil.,
alternately every quarter of an hour.

Nine, A.M.—Looks and feels better. No return of hiccough or catching of breath. Tongue cold; pulse perceptible; one watery stool. Continue medicine.

November 20th, one, P.M.—Pulse gone; skin and breath cold; a clammy sweat on the face; countenance very much altered, very dark-grey; voice indistinct; great thirst.

Veratr., 3d., and Arsen., 3d, alternately.

Eight, P.M.—There was great oppression of breathing at times, and she tossed about much. No pulse could be felt; the skin was warm and dry; there was no urine. She has purged three times; no vomiting; the eyes are turned up.

Continue Veratr. and Arsen.

21st, half-past two, A.M.—We found her lying very quietly; and on being asked how she was, she said she was tired. There was less thirst, and there had been only two scanty watery stools, and no vomiting. She was restless; the pulse could not be felt. There was grinding of the teeth, and twitching of the facial muscles; also slight quick spasmodic action of some fibres of the muscles of the calf of the leg. Continue medicine.

Nine, A.M.—She was much easier. No vomiting; the purging was more fæculent, and the pulse perceptible. Continue medicine.

Seven, A.M.—She was much worse. Since six o'clock the breathing had become oppressed. Constant desire to go to stool without any relief; there was no pulse; the tongue was clammy and cold; the hands and face were discoloured; there was no vomiting, but she complained of pain in the chest. Continue medicine.

Nine, P.M.—Restless, but feels better; voice stronger; no pulse; her face had a wild expression. Continue Arsen. and Verat. She complains of breathlessness.

Half-past eleven, P.M.—The pulse was perceptible; she complained much of shortness of breath; the blood-vessels on the inferior half of the eyeball of both eyes were injected with blood; there was no vomiting or purging. She died early the following morning.

Case XIV.

C. S., a woman, aged 25. Between the 8th and 9th month of pregnancy. Living in the same house with her sister, who dressed the body of a patient who died of cholera. She was seized with severe bowel complaint on Saturday night; the purging which continued has begun to diminish. Vomiting began 27th November, seven, A.M. First seen, three, P.M. Vomiting occurs about every quarter of an hour, ejections green; has not urinated for two days, to-day passed a little; severe pains in the stomach and back; feels sick on raising her head; pulse 60; skin warm.

Arsenic, 3d, every half-hour.

Half-past nine, P.M.—Purged once and vomited twice since visit; pulse 126, weak; countenance dejected; evacuations bilious.

Camphor every quarter of an hour.

28th, eight, A.M.—Pulse 98; vomited once; purged three or four times, stools brown flocculent; tongue and skin warm; pain in urinating, urine scanty.

Mercurius, 3d, every hour.

Noon.—Vomiting and purging almost ceased; feels much better.

Continue.

Nine, P.M.—Retching; desire to vomit; bowels moved four times to-day, with griping, stools thin, yellow; pulse 92.

Continue.

29th, ten, A.M.—Slept from twelve to five this morning; urinated;

bowels three times moved, stools dark and liquid; complains much of pain in back, and bottom of abdomen.

Secale, 3d, every hour.

One, P.M.—Vomited once a yellow fluid; bearing-down pain in bowels continues; pulse 70, full; two yellow motions.

Continue.

30th, one, P.M.—Pulse, 102; pain in abdomen and back continues; movements of child not felt; inclination to purge and urinate.

Continue.

Four, P.M.—Pain in back very severe; purging of dark-brownish thin liquid.

Six, P.M.—When heated gets sick; vomiting, followed by pain in the back; very thirsty; skin cold; pulse quick and weak.

Bryonia, 3d, every hour.

1st December, six, A.M.—Restless night; hands, face, and tongue cold; inclined to throw off clothes; vomiting, with pain in back and breast; voice hoarse; no urine; constant abortive desire to relieve bowels.

Arsenic, 3d, hourly.

Eight, P.M.—Vomited several times blackish stuff along with the water she drank, crying out from pains shooting from back to chest; eyes sunk, and their lids much inflamed; expression almost moribund.

Continue.

2d, eleven, A.M.—Fits of oppressed breathing; no purging; vomiting of dark coffee-grounds looking fluid; skin and tongue cold; pulseless; the labia are swelled and black, and an offensive discharge issues from the vagina.

Continue.

Three, P.M.—Ruptured membranes; the liquor amnii was evacuated.

Secale, 0, every half-hour.

Half-past three, P.M.—A few labour pains occurred.

Eleven, P.M.—The os uteri dilated to an inch in diameter; caput succedaneum forming; pulse distinct, 100; skin, breath, lips, and tongue ice cold; abdomen warm externally, and the liquor amnii felt warm; there was no fœtal pulsation; the head of the fœtus flabby and immovable; no vomiting; bowels opened once, stools dark, fœtid; desire to urinate.

Continue.

3d, nine, A.M.—Restless all night from labour pains, but insensible; there was no thirst; no vomiting nor purging. Through the day the breathing was laborious; eyes turned up, half-open; occasionally roused by pains, which must be very slight; bloody discharge from vagina. The labour continued the whole night; she was quite insensible; arms and legs paralytic; the breath was shockingly fœtid, it was necessary to keep the window open.

She died 20 minutes past six, A.M., 4th December. Speechless for 26 hours before death; unable to swallow for 19 hours. The half of the head was born before she died. The woman in attendance pulled away the putrid fœtus (a female) ten minutes after death.

Case XV.

Mrs. S., aged 23. Intemperate. Was drowsy the whole day yesterday and sick after meals. Was thirsty after supper; took oranges and apples to quench her thirst. Was up till one this morning, 13th December, attending to an eating-house which she opened a week ago,—a damp, dirty, smoky place. At one, P.M., to-day she began to vomit and to be cramped in every part of the body; took some mixture sent by the surgeon at the cholera station, who however has not seen her. Was seen about eleven, A.M., by another practitioner, who gave her a pill containing a grain of opium, a grain of calomel, and some grains of capsicum, to be taken after every loose stool, and brandy *ad libitum*. When visited at three, P.M., she was in a state of complete collapse; pulseless; face cold and clammy; tongue and breath cold; lips and cheeks livid; dark sunken eyelids; eyeballs exposed; eyes turned up. She was also cramped severely in both legs and in the haunches, and was crying out from pains in the right hypochondrium. During the visit a discharge of watery fluid from the bowels took place twice in gushes.

Camphor occasionally. Arsenic, 3d, every quarter of an hour.

Six, P.M.—Was removed from her eating-house home, a distance of about a quarter of a mile, an hour and a half ago, and placed in a room without fire. Was ordered to be brought into the kitchen and placed near the fire; is quite pulseless; ice cold; has had no vomiting, but purged watery liquid thrice.

Continue.

Nine, P.M.—Pulseless; tongue and skin cold; covered with clammy perspiration; eyes turned up; breathing oppressed; less vomit-

ing; purging continues; cramps in legs; complains of pain in back, difficulty of breathing, and intense thirst.

Arsenic, 3d, and Camphor, 3d,
alternately every quarter of an hour.

14th Dec., six, A.M.—Pulseless; vomiting only after drinking; throwing off clothes, and wishes warm bottles removed; purging continues; says she passes a little urine when she coughs; skin and tongue warmer; respiration rapid, 48 in a minute, laborious; raving a good deal; restless; complains of weight on chest, which she wishes removed; cramps in left leg.

Continue.

Nine, A.M.—Little change; cramps less frequent; purging continues watery as she lies; temperature of skin and tongue increased.

Continue.

One, P.M.—No cramps; breathing oppressed; pulseless.

Continue.

Five, P.M.—Pulse occasionally but very faintly perceptible; hands feel cold and clammy; breathing not much oppressed, thoracic; vomiting; only one small brownish stool; no urine; paralytic.

Continue Arsenic.

Nine, P.M.—Lying in the same state; pulseless.

Eleven, P.M.—Lying quiet; skin of hands and face very cold.

Continue.

15th, half-past eight, A.M.—Slept at intervals through the night; no vomiting, urine, nor purging; tongue warm; face and hands cold; pulseless; less thirst; breathing still laborious; stupor, can be roused with difficulty.

Continue.

Half-past one, P.M.—Skin warmer; pulse 104; no purging; feels easier.

16th, noon.—Restless through the night; pulse quite distinct; tongue dry and glazed; purging green fæculent fluid; much retching through the night, which stopped at eight, A.M.; skin inclined to be cold.

Arsenic, 3d, and Bryonia, 3d, alternately every half-hour.

Ten, P.M.—No change.

Continue.

17th, Ten, A.M.—Pulse 90, weak; skin cold; breathing stertorous, thoracic; eyes turned up; delirium.

Arsenic, 3d, and Rhus, 3d, alternately every quarter of an hour.

Five, P.M.—Oppressed thoracic breathing; pulse 72, weak; skin warmer; expression dejected; speech impeded; restless.

Continue.

18th.—Died this morning at six o'clock.

The following four cases died after partially recovering from the second and third stages of the disease:—

Case XVI.

R. A., aged 24.—This young woman had been previously in perfect health, and had attended her brother (Case VI.) during his last illness in his own house. She returned home the evening of his death, and was taken ill at ten, P.M., the same night. We saw her first at five, A.M., the following morning of the 25th of October. She was standing on the floor, supported by her mother, almost naked. The room was quite dark, and the only light we could procure was from the policeman's lantern who accompanied us up to the room. She was purging and vomiting violently, and throwing her arms wildly about. It was with difficulty we got her into bed. The surface of the body was cold; the pulse was gone; violent cramps in limbs.

Arsenic, 3d dil., a dose every quarter of an hour.

Eleven, A.M.—She had been sleeping a little, and had vomited and purged only once since seven, A.M. The pulse was imperceptible; the cramps less severe; skin cold; voice quite audible.

Continue Arsen.

Two, P.M.—No change. Continue medicine.

Seven, P.M.—She is still much cramped, but her appearance is improved. The coldness of the surface is not so intense; the breath is warm.

Nux v., 3d dil., and Arsen., alternately every half-hour.

Half-past eleven, P.M.—No pulse is perceptible; the cramps still continue, though not quite so severe or frequent. She passed her fæces unconsciously; she has been raving much, but when roused speaks sensibly. The tongue is covered with a white fur; she is very thirsty; her eyes are half-open and deeply sunk. Continue medicine.

Oct. 26th, nine, A.M.—A little better, more sensible and more

animated; no pulse; has had some stools, attended with strainiug; has had no vomiting; there is pain at the epigastrium and abdomen; there are no cramps, but she is very eold.

Continue Arsen. and Veratr.

One, P.M.—The pulse was pereeptible and rapid; there had been two watery brown motions.

Continue Arsen. and Veratr.

27th, six, A.M.—She is now warm; there is no vomiting or purging; the pulse is perceptible, and 70 in the minute.

28th, eight, A.M.—Pulse small and weak; heavy expression of face; great oppression of ehest, heaving respiration; no vomiting; once or twiee ineffectual desire to go to stool.

Phosphorus, 1st dil., a dose every half-hour.

Half-past one, P.M.—No better; dull, stupid; no pulse.

Arsen., 3d dil., a dose every half-hour.

Five, P.M.—Eyes fixed and glazed; short heaving respiration almost total inability to swallow. She died at seven, P.M., of 28th.

Case XVII.

B. S., a healthy looking young woman of 21 years of age, liviug in a eomfortable room, had been quite well till two o'eloek, P.M., of the 2d November, when she beeame affeeted with nausea, for whieh she got some Allopathic drugs, after taking whieh she began to vomit. She was seen at half-past eleven o'elock, A.M., of the 3d; had been vomiting elear water, and passing watery stools, all the previous night. The surface was eold; the pulse 120, feeble; the tongue red with frothy margin, and warm; there was slight pain at epigastrium on pressure; no pain anywhere else; felt giddy when she rose.

Seeale, 3d dil., a dose every quarter of an hour.

Half-past two, P.M.—No better; violent vomiting of dingy fluid; cold arms and hands; pulse feebler. Had passed little urine the previous night.

Arsen., 3d, and Verat., 3d,
a dose every quarter of an hour alternately.

Half-past three, P.M.—Pulse scareely pereeptible; mueh vomiting, lips and nose eold, breath warm; eomplained of the urine being sealding.

Cantharid., 3d dil., and Arsen., alternately.

Five, P.M.—Vomited twice and purged once since last report. Pulse 120 to 132, feeble.

Ipecac., 1st dil., followed by former medicines.

Half-past seven.—Vomited and purged twice; pulse 120; face bluish, cold; tongue cold; no cramps; much pain in epigastrium.

Arsen., 3d, every quarter of an hour.

Quarter past nine, P.M.—She had taken cold tea, followed by vomiting, which had continued ever since.

A dose of Ipecac., 1st dil.,
followed by Arsen., 3d, and Canth., 3d, alternately.

Quarter to twelve, P.M.—No vomiting since last report. Purged once; catching pain in the precordial region when she breathes deeply; very thirsty, the more she drinks the worse is the thirst.

Cuprum, 6th, one dose, and Arsen. and Canth. as before.

Nov. 4, quarter past seven, A.M.—Had cramps about three o'clock in the morning in the calves of the legs and wrists; vomited three times and purged twice; so thirsty that she drank all the water in the bottle applied to her feet; pulse 112, weak. She looks better, and the voice is stronger; occasional cramps in the wrist.

Cuprum, 6th, one dose,
afterwards Arsen. and Veratr. alternately.

Half-past nine, A.M.—Pulse 100; tongue and skin warmer; stools darker, more fæculent; great thirst.

Continue Arsen. and Veratr.

Three, P.M.—Pulse 108; vomited three times a green watery fluid; bowels twice moved; complains of burning in the throat; no urine.

Canth., 3d, and Arsen., 3d, alternately.

Eight, P.M.—One copious brown stool; pulse 90, wiry; great thirst; cramp in the leg.

One dose of Cupr. Acet., 3d,
and afterwards Arsen. and Veratr. every half-hour.

Nov. 5, ten, A.M.—Much better; skin, and breath, and tongue warm; slept several times for a short time; has had much ineffectual desire to make water.

Canth., 3d, and Arsen., 3d, alternately every half-hour.

Eleven, A.M.—Pulse 88, stronger; purging a little brown water; less thirst.

Arsen., 3d, half-hourly.

Nov. 6, one, A.M.—Sound asleep, quite warm, and pulse natural. Continue medicine.

Half-past eleven, A.M.—Bowels were moved two or three times, and the evacuations were reported to be dark. The tongue is dark-brown; pulse 88, strong. Complains of much general uneasiness; no urine has been passed. Ordered a little arrow-root.

Tereb., 3d dil., hourly.

Half-past eleven, P.M.—The tongue is dry and red; pulse 88; great general pain complained of; bowels once moved; inflammation of the eye.

Continue Tereb.

November 7, half-past nine, P.M.—Bowels only once moved to-day, the evacuation dark and thin; some urine passed; face flushed; tongue red; breathing oppressed. She had got up and gone into the kitchen, along a stone floor, and had eaten a part of an apple.

Bellad., 3d dil., a dose every hour.

8th, half-past nine, P.M.—Little change; had passed urine three times.

Arsen., 3d, and Bell., 3d, alternately, hourly.

November 9, noon.—Very delirious; blood coming from the mouth; tongue red; great thirst; pulse jerking, feeble, about 80.

Continue Bellad., 3d dil.

Seven, P.M.—Much tossing; tongue and lips dry and bleeding; eyes staring; hands cold; pulse slow.

Arsen., 3d dil.

Nine, P.M.—Laborious breathing; bluish, speechless; pulse 75; seems insensible.

Laches., 6th, and Arsen., 3d, alternately every half-hour.

10th, eight, A.M.—Hands and arms cold; breathing laborious; lips and teeth covered with black sordes; passed a very restless night; no purging or vomiting; cannot speak, but is sensible when spoken to.

Bell., 3d dil.

She died at six, A.M., of the following morning.

Case XVIII.

G. W., aged 47, a smith.—This man has had bowel complaint during the day for three days, but able to be at work. Sat up through the night of 3d November with his daughter, who died of cholera. At three, A.M., November 4th, the bowel complaint became worse; went to his work at seven, A.M., taking for breakfast a piece of dry bread only; felt sick on the road, and took a glass

of brandy, which he vomited, and the vomiting continued. We first saw him at nine, A.M. His tongue, skin, and breath were cold; hands and nose livid; eyes sunk, and surrounded with a dark circle; expression ghastly; voice husky, speech altered and indistinct; pulse 140, weak. He was still anxious to go out to make arrangements about the funeral of his daughter.

Arsenic, 3d dil., every quarter of an hour.

Two, P.M.—He was in bed. Severe cramps in the legs and arms; vomited five times, and purged seven times since last visit, dejections consisted of a large quantity of colourless fluid, containing flocculi; pulse 120.

Continue Arsen.

Half-past five, P.M.—Vomited twice and purged once, fluid from bowels as before; cramps less severe; skin cold and clammy; voice stronger; pulse very weak, indistinct.

Continue Arsen.

Half-past nine, P.M.—Skin warm and moist; no purging, vomiting, nor cramps; great thirst; pulse 88, full but weak. Took, about seven, P.M., a cupful of strong tea without milk, and eat a little bread—vomited neither. Voice much stronger, though his general appearance continues as before; eyes sunk, half-open; tongue furred, yellow, rather cold.

Continue Arsen. every half-hour.

5th November, quarter past twelve, A.M.—Bowels not moved; no vomiting; is restless, cannot fall asleep; pulse 100, weak; features contracted and hands shrivelled.

Continue Arsen.

Half-past nine, A.M.—Bowels moved soon after last visit, open since every quarter to half-hour, stools watery, of a dirty brick colour, small in quantity; tenesmus, and ineffectual desire to urinate; craving for food; countenance cadaverous; feet, hands, and genitals blue, cold, and shrivelled; face and lips cold; tongue furred and cold; breath warm; pulse about 100, very weak, and scarcely perceptible; less thirst.

Nux vom., 3d dil.

Ten, A.M.—In the same state.

Mer. sol., 3d dil., and Canthar., 3d dil.,
alternately every half-hour.

Eleven, A.M.—He took half a tea-cupful of bread and milk; felt

fatigued and exhausted; respirations 32; pulse 100, more distinct.

Merc. cor., 3d, and Arsen., 3d dil., alternately.

Twelve, noon.—No improvement; breathless; whole body cold; pulse could not be felt at left wrist, very indistinct at the right. Continue medicine.

Four, P.M.—Has been repeatedly seen, but no change; took arrow-root and milk twice; was perfectly sensible till within ten minutes of his death. He was excited and wept when his daughter's body was removed from the house at half-past four, P.M.

He died at eight, P.M., 5th November.

Case XIX.

J. H., aged 38.—Intemperate habits. He was drinking to excess yesterday; was seized at ten last night with vomiting and bowel complaint. We saw him first at half-past seven, A.M., 13th November. Watery purging through the night, none since nine, A.M.; urinated about an hour ago; severe cramps in legs, arms, hands, and side; body warm; feet, hands, and face cold and livid; pulse 106, small, weak, and indistinct, voice hoarse; great thirst.

Tinct. Camph. every five minutes.

Ten, A.M.—Cramps in legs very severe; in other respects the same.

Verat., 3d dil., and Cupr., 3d dil.,
alternately every quarter of an hour.

Four, P.M.—Severe cramps in his legs, and frequent vomiting; voice low and hoarse.

Continue Verat.

14th, nine, A.M.—Vomiting continues every few minutes; bowel complaint abated; no urine since yesterday afternoon; great thirst and hiccough; voice stronger; pulse 76, small.

Arsen., 3d dil., and Nux vom., 3d dil.,
alternately every half-hour.

Ten, P.M.—Pulse 100, small; vomiting continues; tongue covered with white fur, warm; no pain at epigastrium; slight cramps in the legs continue; no urine passed.

Canthar., 3d dil., every half-hour.

15th, nine, A.M.—Slept well; no urine past; very little vomiting.

Nux vom., 1st dil., every half-hour.

Twelve, noon.—Vomiting ceased; frequent ineffectual inclination to urinate.

Digital., 3d dil., every half-hour.

Nine, P.M.—Still no urine passed; one abundant bloody stool.

Hellebor., 6th dil., every half-hour.

16th, Ten, A.M.—No change.

Ten, P.M.—Still no urine passed.

17th, half-past eight, A.M.—Speaking indistinctly, he complains of pain in his chest—it sounds clear on percussion; respirations 30; pulse 68; tongue dry; slight strabismus; no urine passed; no pain or fulness over the pubis; some difficulty in swallowing; hands cold, shrivelled, livid.

Stramon., 9th dil., every quarter of an hour.

Three, P.M.—No improvement.

Laches., 6th dil., every quarter of an hour.

Nine, P.M.—He died a few minutes before this visit on 17th November.

We now pass from this dreary region of death to cases of recovery; and the cases which immediately follow constitute what we may call the Camphor group, as that remedy was mainly, if not solely, instrumental in rescuing almost all these patients.

Case XX.

Mrs. R., aged 43, previously in good health, was taken ill on the 7th of October with cramps, &c., in the limbs, and vomiting. She was seen by an Allopathic physician on the 8th, and ordered laudanum. When seen at eight o'clock, P.M., of the 9th, there was watery purging and much sickness.

Veratr., 3d dil., a dose every half-hour.

Twelve o'clock same night.—Her face is changed, being dark and sunken, the lips livid. She has fainted several times since last visit. Severe cramps in legs and stomach; the pulse is small and quick.

Camphor, a dose every few minutes.

After four or five doses she fell asleep.

10th, ten, A.M.—Is quite well, except slight headach and great exhaustion.

Case XXI.

N. G., aged 21, a woman of intemperate habits. When walking

in the street to-night at half-past eleven, she was suddenly seized with severe cramps in the abdomen and legs. She would have fallen had she not been supported and led into the house. We saw her first at twelve, P.M., on the 21st of October. Her abdomen was much swelled, she had severe cramps in the legs, shivering and coldness all over the body. Frequent muttering delirium, tossing about in the bed; complains much of cold. Great desire to vomit, little ejected; pulse slow and weak.

Tinct. Camphor, in water every quarter of an hour.

22d, one, A.M.—Much better.

Verat., 3d dil., every half-hour.

At the visit during the day, 22d October, found she was quite recovered.

Case XXII.

Mrs. T., aged 23, subject to dyspeptic attacks. She awoke this morning, 4th November, about six, A.M., with vertigo, noise in her ears, nausea, and pain in the epigastrium. We first saw her at seven, A.M., same day. She has vomited (three times in an hour) a large quantity of a greenish watery liquid. She complains of pain in the stomach and head. Skin cold; pulse 120, irregular; painful dry retchings, no purging.

Tinct. Camphor, every ten minutes.

One, P.M.—No vomiting; occasional pains in her stomach and through her head; taken no food; rather thirsty.

Continue Camph. every half-hour till relieved.

5th November, noon.—Says she is better; has some weight and pain in epigastrium, and feels a little nausea.

Continue Camph.

6th November, two, P.M.—She is sitting up, and is quite well.

Case XXIII.

Mrs. T., aged 24.—Has had a cold for several weeks, but been out every day visiting her husband, who is in the infirmary, labouring under phthisis. Is in circumstances of great poverty and destitution, living chiefly on tea, which she takes twice a day. She was last night attending her uncle, whom she left dying of cholera between ten and eleven, P.M. She states that at that time she was seized with tremor over the whole body, which continues with chilliness, vertigo, and noise in the head. She took whisky and pepper

an hour ago, and has been sick and retching frequently. During the last hour and a half she has had three copious, offensive, brownish liquid stools. We first saw her a little after midnight, 6th November. She was then sitting up in bed, wrapped in blankets, her teeth chattering, rigors, and anxiously inquiring whether she would live; her face, nose, lips, and tongue were cold; skin dry, cold; she began to retch during visit; pulse 108, feeble.

Tinct. Camph., every ten minutes.

Two, P.M.—Slept a little, is squeamish.

Arsen., 3d dil., every half-hour.

To have sago from the dispensary.

7th November, noon.—Sitting up by the fireside quite well.

Case XXIV.

This case of recovery from the incipient stage finds its proper place here, although Camphor was not the remedy.

J. N., a girl aged 22.—We first saw her at two, P.M., November 13th. She was taken ill suddenly last night with vomiting of brown and slimy matter and violent pain in the legs, with much shivering. tongue warm; complains of pain in right side; pulse 120, small and weak.

Arsen., 3d dil., every half-hour.

14th November, nine, A.M.—Better; no vomiting or pain; pulse 70; tongue clean; no thirst.

Continue Arsen.

Two, P.M.—Continues free from pain; feels comfortable and well.

Case XXV.

Mrs. C., aged 50.—Unwell for a week past. Has been in attendance on a woman who died of cholera this morning, November 13th. She got Tinct. of Camph. We were sent for at nine, P.M. She had violent empty vomiting; pulse 120, small; much pain in epigastrium and abdomen; no purging.

Acon., 3d dil., Merc. cor., 1st dil., alternately every hour.

14th November, nine, A.M.—Much better; no vomiting; pulse natural.

Continue Merc. cor.

Ten, P.M.—Continues better. To have a supply of sago.

16th November, noon.—She continues quite well.

Case XXVI.

E. M., a girl, aged 21.—A stranger, and given shelter in the house where she is. She states that she took spirits during the day on account of pain in the epigastrium, and felt tolerably well till about six, P.M., when, after taking some tea, she began to vomit; has since vomited repeatedly a brown watery liquid. She had severe pain in the stomach and through the head, was taciturn, fainted before she was put to bed, and had cramps in the abdominal muscles. The muscular contractions were irregular, and confined chiefly to the left side of the abdominal parietes. We first saw her at half-past eleven, P.M., 15th November. She was lying quietly on her back, but soon began to toss about, kick, and strike with her arms, and roll her head from side to side, sobbing. She bent herself forward involuntarily with a scream, and then fell powerless. The abdominal muscles on the left side were raised and hard, swelled on that side as in pregnancy; sound, on percussion, hollow. She has had several paroxysms of a similar nature since six this evening. She says she has no pain except headach during the paroxysm. Her skin is cold and dry; pulse 92.

Tinct. Camph. every ten minutes.

16th November, noon.—Is better; sitting up dressed.

Six, P.M.—Is up, cheerful, and quite well.

Case XXVII.

M. L., a girl, aged 9.—Nine cases of cholera have occurred in the flat where this patient lives; both her mother and sister had it. We saw her first at half-past eight, P.M., November 19th. She was suddenly seized, about an hour ago, with violent pain in the abdomen, and empty retching, chattering of the teeth, coldness of surface; anxious, uneasy expression of face; restless; voice feeble and moaning; pulse 130; no purging; very great thirst; coldness of breath.

Tinct. of Camph. every five minutes.

Half-past ten, P.M.—After five or six doses she fell asleep. Found her asleep. Pulse 90; expression improved; respiration natural; passed urine.

Continue Camph.

20th November, seven, A.M.—She has slept calmly since last visit. Pulse 100; aspect natural.

Nine, A.M.—Much the same.

Bellad., 3d dil., every two hours.

Nine, P.M.—Sleeping; no stool; urinated.

21st November, nine, A.M.—Slept well, looks better, and seems quite well.

22d November.—Continuing well.

Case XXVIII.

C. P., a woman, aged 27.—Her father has been ill of cholera, and she has attended him for the last two days; during this time she has taken scarcely any food, and has had no rest. While sitting at the fireside last night, about ten o'clock, she fainted and was put to bed. She felt cold, and had some brandy and water; after this she shook, and her teeth chattered. Vomiting began about eleven, P.M. She had cramps, severe pain in the epigastrium, and pains over the whole body, which made her cry out and be restless. She was first seen at half-past two, A.M., November 21st. She was roaring from cramps all over the body, which made her retch; eyes wide open, expression restless; complained of coldness in her bowels; face, lips, and hands cold and pale; tongue warm; pulse 104, unsteady.

Tinct. Camph. every quarter of an hour.

Nine, A.M.—Fell asleep after taking medicine; slept till eight, A.M. Pulse 100; no vomiting or purging; great general pain; no urine passed.

Four, P.M.—Found in a deep sleep; pulse 96, hard; perspiration, warm on the chest, cold on the forehead; no urine passed.

Continue Camph.

22d November, nine, A.M.—Was up, sitting by the fire; complains of general uneasiness; pulse quick.

Nux vom., 3d dil., every two hours.

23d November, nine, A.M.—Sitting up; complains much of giddiness; perspired freely through the night; bowels costive; pulse 62.

Continue Camph. occasionally.

One, P.M.—Doing well; urine and bowels natural.

25th November, three, P.M.—Continuing quite well.

Case XXIX.

A woman, aged 48.—Had diarrhœa three weeks ago for eleven days, but has been in good health since. Took dinner at two, P.M., after which her bowels were moved once, and she was directly afterwards seized with vomiting, first watery fluid, and then her dinner. Seen first at four, P.M., October 24, when she was cramped in the

legs and toes; was in bed, roaring furiously from pain in the stomach, and vomiting a large quantity of whitish liquid, with painful retchings. After the vomiting had ceased, the pain in the stomach became excruciating, followed by the same train of symptoms; pulse slow and faint; skin cold and clammy; hands and feet cramped. Camph. every now and then was given. After an interval of a quarter of an hour she vomited the white characteristic cholera liquid once more, then became cheerful, wiped her face, and exclaimed, "Now, I am better;" was very thirsty. Camph. now and then till quite warm. Seen at nine, P.M.; was better, except occasionally cramped in the tongue and eyelids. Visited next day; quite well.

Case XXX.

R. G., aged 53.—A miserable house, lying on a shake-down in a corner without covering. Intemperate; drinking on Sunday. Was attacked in his own house at half-past ten, P.M., of the 27th November. Seen first 28th November, seven, P.M. Has been purging frequently thin whitish liquid, involuntarily; has vomited two or three times, frequent dry retching; cramps in knees, thighs, and calves of the legs; great and incessant thirst; heart's action regular but very weak; pulse 70, small and weak; general coldness; tongue cold; voice tolerably good; no urine for 24 hours.

Camphor every ten minutes.

Ten, P.M.—No vomiting nor purging.

Continue.

29th, ten, A.M.—Slept well; no vomiting nor purging; urinated a little last night; thirst continues.

Continue.

Twelve, P.M.—Purged twice through the day; fæces yellow; urinating freely; still thirsty; complains of hunger.

30th.—Purging ceased; feels well.

Case XXXI.

J. H., aged 64.—An occasional drinker. In delicate health has had bowel complaint for a week past, it stopped suddenly yesterday, but recommenced in the forenoon; began to vomit about three, P.M., of the 1st of December. First seen 2d December, one, A.M.; urinated two or three minutes ago; purging, stools like rice water, very fœtid; cramps in toes; great thirst; face inclined to be cold; tongue coldish, furred; pulse 106, weak.

Camphor every ten minutes for three hours,
then Mercurius, 3d, hourly.

Noon.—Bowels once moved, stools the same character as before; no urine, though a desire to pass it; pulse 82; no cramps.

Veratrum hourly, Camphor occasionally.

Eleven, P.M.—One stool; continues better; no cramps; urinated this afternoon.

Continue.

3d, noon.—Had a good night; urinated; passed a bilious stool this morning, and is hungry.

Case XXXII.

C. L., aged 44.—Has been attending a case of cholera. Of such dissipated habits, that her family who are in respectable circumstances cannot have her with them. About three, P.M., 6th December she was seized. First seen 7th December, one, A.M. Feeling of coldness over the whole body; violent shiverings and cramps; constant sickness, vomited seven or eight times since seizure; purging several times (dejections not seen); urinated a little time ago; great thirst; heart's action weak; pulse 74, weak; skin cold, shivering violently; tongue cold; giddy.

Camphor every quarter of an hour.

Eight, A.M.—Pulse 100; hands and tongue warm; great pain in epigastrium, increased on pressure; vomiting; no purging since last visit; cramps continue, but less severe; giddiness; thirst and headach; urinated about an hour ago; constant nausea; slept none; still shivering during the cramps.

Ipecacuan., 3d, hourly.

Six, P.M.—Great thirst; much pain in the belly, with continual eructations; pulse 120, weak.

Continue alternately with Aconite.

8th, eight, A.M.—Some pain during the night; feels better this morning; temperature of the skin natural.

Case XXXIII.

J. Mc., aged 19.—Two cases of cholera occurred previously in this house. A sober lad. Was quite well all day and went to bed well. On 8th December, about ten, P.M., he was suddenly seized with cramps all over the body, especially in the arms, legs, and

stomach, with great stiffness both of arms and legs; could scarcely move and not walk without support; nausea and dry retching; no purging; has not urinated since rising in the morning; has had laudanum and whisky, and pepper, which seemed to make him worse. First seen at half-past eleven, P.M. Found him with his feet in warm water, bellowing furiously; would not tell at first where his pain was; face flushed; clammy perspiration; skin hot; pulse 164, pretty full; shaking and shivering from pain; epigastrium tender on pressure; great thirst; face dark; very anxious.

Camphor every five minutes.

After the fourth dose the severity of the pain began to diminish, and he passed fully lb. ij. of limpid urine; felt easier, though still moaning loudly.

Continue.

9th, six, A.M.—Cramps continued till four, A.M., when he fell asleep; slept till now, and he is quite free from pain; urinated at four, A.M.; no motion of bowels; pulse 76, regular; skin of natural temperature.

10th.—Is free from pain; bowels regular; urinating freely.

Five, P.M.—Relapsed after taking soup and rabbit to dinner; pains as before, but not so violent; no urine since morning.

Repeat Camphor.

Nine, P.M.—Pains reported less severe, but constant sharp pain all through body.

Cuprum Aceticum, 3d, every hour.

11th, half-past eight, A.M.—Urinated twice: bowels thrice moved; pulse 72, natural; tongue dry; pain over the whole abdomen, increased on pressure; great thirst; no cramps after eight last night; some giddiness still remaining.

China, 3d, thrice a day.

Two, P.M.—Reported much better.

12th.—Found up supping porridge; says he is well.

Case XXXIV.

Mrs. D., aged 56.—Has been a tippler for years, but her son says she has been tolerably sober for three months. Admits she has had whisky to-day. Has had two glasses just before visit; is talkative, afraid of the doctor, and in great terror lest she should be removed to hospital. Unwilling to give an account of her state. States that she has felt giddy and queer all day; passed no urine

since yesterday. Went to bed apparently pretty well. Was seized at ten, P.M., 10th December, with severe cramps in the stomach and toes, she screamed violently and rolled about the floor. When seen at half-past ten, P.M., her face was flushed and haggard; her eyes watery; retching and vomiting frothy liquid; legs cold; face and tongue warm, white; pulse 100; feels cold and shivering; has great thirst: no bowel complaint.

Camphor in hot-water every half-hour.

11th, half-past nine, A.M.—Pains severe in epigastrium; tongue exsanguined; pulse 84; retching; no purging; urinated once.

Nux, 3d, hourly.

Four, P.M.—Pains much less severe; no purging; still som retching, but lying quietly; skin warm.

Continue.

12th, eight, A.M.—Vomited some glairy mucus yesterday afternoon; slept well; pulse 72; pain in epigastrium increased on pressure; tongue white; urinated freely; great thirst; nausea.

Antimonium crudum, 3d, hourly.

13th, half-past eight, A.M.—Some sickness; pulse 88, strong; still pain at epigastrium; urinated; great thirst; no vomiting; surface warm; tongue moist and clean.

Continue.

14th.—Sitting up taking breakfast; feels well.

Case XXXV.

J. R., aged 4.—Was quite well to-day, 11th December. While sitting playing, about three, P.M., she cried out suddenly of her bowels, and when relieving them began to vomit white frothy fluid. She became stiff, cold, and blue, especially below the eyes; complained of pain in her belly and fainted; was given some hot whisky toddy, after which she became warmer; no urine since forenoon. Seen at nine, P.M., and ordered

Camphor half-hourly.

12th, nine, A.M.—After a few doses of Camphor, went to sleep; slept well and perspired; urinated this morning. Is up playing, and seems well.

Case XXXVI.

Mrs. D., aged 38.—A dirty, crowded house. Was quite well all day, 16th December. About eight, P.M., took tea and bread; im-

mediately afterwards, feeling hungry, took a piece of roasted kidney; felt sick and vomited; took tincture of rhubarb and opium, which was vomited immediately. First seen at half-past eleven, P.M. Was vomiting every five or six minutes bloody fluid, twice with coagula, with severe retching. Was sitting up in bed cold, ghastly, and pulseless. Great soreness from the middle of the sternum to the epigastrium, increased on pressure; thirst; breathing much oppressed; suppression of urine.

The sickness was relieved by drinking warm water containing a little spirit of camphor. During the next half-hour, she vomited seven times the same bloody-looking fluid; the cramps were less severe.

Continue Camphor.

17th, ten, A.M.—During the two hours after visit, she vomited four times the same bloody fluid, and since three this morning, thrice a brownish, yellow fluid; pain in epigastrium gone; slept a little; bowels open, urinated; is warm; pulse 68; still complains of nausea; less thirst; tongue pale and warm.

Continue.

18th, ten, A.M.—Has not vomited nor purged since twelve last night; feels sick; pulse 88, weak; skin cool.

Continue.

19th.—Was out; the children said their mother was well.

Case XXXVII.

J. T., aged eleven.—Has been purging and vomiting occasionally since Sunday last. Become much worse yesterday afternoon, 3d January. First visited 4th January, four, A.M. Had watery purging and vomiting; skin cold, hands blue, tongue ice-cold; quite pulseless; looks dejected; great thirst; says he has no pain.

Camphor every ten minutes.

Eleven, A.M.—Two stools; no vomiting; skin and tongue warm; urinated this morning.

Arsenic, 3d, half-hourly.

Ten, P.M.—Bowels three times moved; urinated freely; skin warm; pulse 94; sleeping quietly; felt hungry.

Omit medicine.

5th, eleven, A.M.—Slept well through the night; crying for food this morning.

8th.—Running about quite well.

Case XXXVIII.

M. D., a girl, aged eleven.—A sister she nursed died of cholera on Wednesday. Yesterday she seemed dull, but her friends thought she was grieving for the child. To-day, 5th January, at seven, A.M., began to vomit and purge. First seen at eight, P.M. Was vomiting frothy matter; had watery purging; no cramps; great thirst; skin cold; face, lips, and nose blue; no pulse; urinated a little time ago; complains of pain in the head.

Camphor every ten minutes.

Ten, P.M.—Since last visit, vomited twice; no purging.

Continue.

6th.—Vomited twice to-day; no purging; urinated three times; skin warm; pulse 112; thirst still great; dark circles round eyes.

Arsenic, 3d, every hour.

7th.—No vomiting; urinated three times; bowels once moved; fæces dark and liquid; less thirst; pulse 84; felt hungry; this afternoon had a few spoonfuls of sago, which were not vomited.

Continue every two hours.

8th.—Had a good night; no purging; urinated freely; feels better.

Continue.

9th.—Slept well, feels well, and is hungry.

Case XXXIX.

Mr. K., aged twenty-six.—Had nausea and vomiting during the night, with cramps in the abdomen and pains in the epigastrium. Seized at five, A.M., 9th January; first seen ten, A.M. Vomiting large quantities of whitish watery matter; purged once very profusely; pain in abdomen and epigastrium; shaking and chattering his teeth; great thirst; breath cool; pulse quick and weak; skin cold; no urine since early in the morning.

Camphor every quarter of an hour.

Three, P.M.—Still sick; vomited twice, but free from pain; pulse fuller and regular.

Ipecacuanha, hourly.

10th, ten, A.M.—Very thirsty; vomited this morning watery liquid in abundance; frontal headach.

Nux Vomica, 3, every two hours.

Nine, P.M.—Shaking involuntarily; skin warmer; thirsty.

Continue.

11th.—Much better; to have arrow-root.

12th.—Continuing to improve.

13th.—Up, sitting at fireside; feels hungry.

Case XL.

A. M., a girl aged twenty.—Small, dirty, very smoky house. Has had bowel complaint for two or three days; catamenia ceased yesterday. Seized 14th January, four, P.M. First seen, nine, P.M. About four, bowel complaint became very severe, with vomiting; evacuations came in sudden gushes, described as of green liquid. At six, P.M., severe pain in bowels began, came on in fits, especially severe immediately before purging; she had been screaming and tossing about during the pain; no cramps in limbs. Has taken peppermint and laudanum, but had an attack since; passed urine at four, P.M.; great thirst; pulse 104, weak; hands and arms cold; face cool, dusky; tongue white, furred, cool.

Camphor every quarter of an hour.

5th, ten, A.M.—Vomiting and purging stopped soon after visit last night; slept a little; feels better this morning; pulse 92; skin warm; tongue still furred; less thirst; severe headach, attributed to a blow which she received on Saturday.

Mercurius, 3d, every four hours.

16th, eight, A.M.—Had return of sickness last night, which was checked by a few doses of camphor. Is up, working in the house; feels well.

Case XLI.

Mrs. S., aged 43.—Passed through Glasgow, and passed a night there seven days ago. Was suddenly seized at four this afternoon, 15th January. First seen at five, P.M. Watery purging and vomiting; cramps in the epigastrium; great thirst; no pulse perceptible; extremities cold; face haggard; eyes sunk; suppression of urine.

Camphor every ten minutes.

Eight, P.M.—Better; pulse 100; passed urine; stools fewer and more fæculent.

Aconite, 3, and Mercurius, 3, alternately hourly.

16th, eleven, A.M.—Much better; no stool; pain at epigastrium.

Nux, 3, every two hours.

17th.—Quite well, except slight pain at epigastrium, and weakness.

Case XLII.

Mrs. P., aged 40.—Attended her husband who had cholera, (Case LXII.) Has not been well for some weeks. Was out late last night in the rain; shivered before going to bed. Began to purge and vomit this morning, 23d January, about two o'clock; first seen at eleven, A.M. Vomiting frequent, of everything taken, and of bitter liquid; purging; stools watery, with whitish flakes; cramps in both popliteal spaces; great thirst; coldness; difficulty of breathing; pulse irregular, small; the cough which she has had for some time has left her.

Camphor occasionally, and Mercurius, 3, every hour.

Five, P.M.—Much better; is warmer; no nausea nor purging since she got the powders; still thirsty; has urinated.

Continue.

24th, eleven, A.M.—Was found asleep, and breathing heavily. The cough has returned.

Bryonia, 3, every two hours.

25th.—Bowels not moved since last night; pulse 84, full; still coughing.

Continue.

26th.—Much better; up, attending to her house.

Case XLIII.

J. C., aged 42.—Was cramped last night in epigastrium; took brandy and laudanum on going to bed. The pain became worse this morning, 24th January, between two and three; took laudanum again; it made him sick, and he vomited several times bitter white watery liquid profusely. Diarrhœa then set in. First seen at three, P.M. Was cold and sallow; great thirst; pulse intermittent; tongue furred.

Camphor every ten minutes,
and then Mercurius, 3, every half-hour.

Nine, P.M.—Much better; skin dry and warm; pulse 96, regular; less thirst; bowels moved twice; stools copious and thin; no urine.

Continue.

25th, eleven, A.M.—Urinated this morning; bowels opened once; slept well last night, and perspired a little.

Continue.

26th.—Better still; thirsty and sick after drinking water.

Continue.

27th.—Better; bowels not open; urinated three times since last visit.

29th.—Says he is quite well; is hungry.

The following cases (all but the first) recovered from fully formed cholera.

Case XLIV.*

E. G., a woman aged 35.—Habits temperate; previous health good. Was quite well last night. She was taken ill at three this morning, 23d October, with vomiting and purging. We saw her first at three, P.M., the same day. Surface of the body cold; an expression of terror on her face; tongue and breath cold; no pulse; moaning from cramps; complained much of pain at breast. She had three or four doses of Arsenic, 3d dil., without any benefit.

Five, P.M.—Acid Hydrocyanic, 3d dil., every five minutes.

In about half an hour she exclaimed, "God be thanked, my heart is getting better." Pulse perceptible, surface warmer.

Arsen., 3d dil., every quarter of an hour.

Eight, P.M.—Vomited and purged once; no cramps; complains much of pain in sides and back; surface warm, and perspiring; very thirsty.

Continue Arsenic.

24th October, six, A.M.—Soreness of body, especially of abdomen; was easier from twelve to three. Pulse not perceptible.

Continue Arsenic.

Half-past eight, A.M.—In the same state.

Continue Arsen.

Three, P.M.—Pulse 120; vomited once; tongue cold; no cramps.

* This is a case of only partial recovery, for she afterwards died in the Infirmary, and of course it does not appear among the recoveries in the table; but as it is interesting for various reasons, we have thought it advisable to include it in our reported cases. She was removed at the express desire of the lodging-house keeper, and probably suffered in consequence of the removal.

Continue Arsen.

Five, P.M.—Stools dark-red, with a fæculent smell; complains much of thirst and pain in the abdomen.

Merc. cor., 2d dil., half-hourly.

Nine, P.M.—Pulse 90; great pain in abdomen. Being a lodger merely, and not comfortably attended to, at the request of her friends she was sent to the Infirmary.

Case XLV.

Mrs. M'D., aged 28, married nine years, has no family, of hæmorrhagic diathesis. She has been weakened by too frequent and too copious catamenia. At the end of the last catamenial period, three days ago, diarrhœa came on, which continues. She began to vomit this morning, and continued to do so till six, P.M., when uterine hæmorrhage commenced; she got very weak and took brandy at seven, P.M., which was instantly vomited. We saw her first on 28th October, at half-past eight, P.M., she was sitting in bed, melancholy and afraid of instant death; pulse 128, small; skin excessively cold, with cold perspiration on nose and forehead. Complains of being very sick; cold, particularly in the bowels, and thirsty; urine suppressed since last night; feels very weak, and says she cannot breathe when lying, and cramps come on in legs. She is sallow and ghastly in appearance.

Secale, 1st dil., every few minutes,
to be followed in half an hour by Verat., 3d dil.,
every quarter of an hour.

Twelve, P.M.—She has had only one attack of vomiting, along with purging without cramps.

To have her feet in warm bath. Continue Verat.

29th, eight, A.M.—Much better; no vomiting or purging since midnight; felt sick at four, A.M., and took a few doses of medicine; afterwards fell asleep and perspired freely; pulse, when lying, 92; is irresistibly thirsty.

Secale every half-hour.

Twelve, noon.—Better; no vomiting or purging.

Nine, P.M.—Has perspired almost the whole day; skin warm; pulse 80, firm and full; no purging or vomiting; had some slight cramps in the legs twice since last visit.

Continue.

30th, eleven, A.M.—Much better; bowels not moved.

Continue Secale.

31st, six, P.M.—Better; bowels not moved.

Nov. 2d, ten, P.M.—Says she is now quite well.

Case XLVI.

M. D., a woman of 23 years of age, and was seen first in the house whence her mother had been removed to the Infirmary suffering from cholera, of which she died. Another woman died of cholera in the same flat. She was seen first at one, P.M., of the 29th of October, the expression of countenance dejected; face of a bluish colour and cold; frequent retching; copious brownish stools; pulse 128, weak; feels very weak and chilly.

Arsen., 3d dil., every hour.

October 30th, half-past ten, A.M.—After four doses of Arsen. began to perspire; bowels only twice moved since last visit; pulse 100.

To continue Arsen., every two hours.

31st October, five, P.M.—Pulse 92, soft; bowels not moved. Was ordered sago, and to continue medicine.

1st November.—Found her up, and quite well.

Case XLVII.

Mrs. B., aged 32, a widow.—Was drinking to excess on Saturday last; yesterday at six, A.M., began to vomit, first bilious matter, then whatever taken. We saw her first at five, A.M., November 13. Skin warm, except hands and arms, which are cold; colour natural; bowels costive for two days; pain in chest and palpitation of the heart; tongue warm; burning in stomach; no cramps; vomiting very urgent; great thirst. Has had salts and brandy; pulse about 90, small and indistinct.

Tinct. Camph. every ten minutes.

Six, A.M.—No change.

Verat., 3d dil., Arsen., 3d dil., alternately every half-hour.

One, P.M.—Constant watery vomiting; no cramps; pulse 120. Continue medicine.

Eight, P.M.—Vomiting continues; urgent thirst.

Continue Verat.

14th November, one, A.M.—Constant vomiting; contrary to orders has been getting tea and spirits.

Half-past nine, A.M.—Vomiting continues, of water with dark flocculi; pulse 120, small; ineffectual desire to urinate; very giddy when she tries to rise; much pain in epigastrium.

Nux Vom., 1st dil., half-hourly.

Five, P.M.—Rather better. Continue medicine.

Half-past nine, P.M.—No vomiting; pulse 112, tolerably strong.

15th, nine, A.M.—Better; has taken castor oil; pulse 80; urinating.

Continue Nux. To have arrow-root.

Noon.—Pulse good; bowels open; dejections black.

17th, half-past eight, A.M.—Vomited three times during the night; feels better.

18th.—Complaining of pain in stomach and flatulence; pulse 80; skin warm, soft; bowels costive.

Tinct. Camph. occasionally.

21st.—Is up and quite well.

Case XLVIII.

F. R., aged 27.—Delicate and subject to diarrhœa. She has been three days under the action of Allopathic remedies. We saw her first, November 16, eleven, A.M. She was lying on her right side; countenance pale, haggard, and dejected; pain in the head, limbs, and abdomen, below umbilicus; purging and vomiting white watery fluid; pulse 126, weak; skin cold; tongue furred; great thirst.

Tinct. Camph. half-hourly.

Three, P.M.—Vomiting ceased, is sick; bowels opened twice; pain in the abdomen; pulse 100.

Merc. sol., 3d, every hour.

Eleven, P.M.—Much better; vomited and purged only once; pains in abdomen less frequent and severe.

Continue Merc.

17th, eleven, A.M.—No purging nor vomiting; pulse 80; skin warm; perspired through the night.

Continue Merc.

18th.—Slept well; no pain; tongue cleaning.

19th.—Is quite well.

Case XLIX.

W. C., aged 56.—He has had diarrhœa for three days. Since

five o'clock last night, has been vomiting and purging; cramps since four this morning. Has had brandy and four opium pills, productive of no benefit. We saw him first, November 18, half-past two, P.M.—He was lying on his back speechless; pulse 108; skin warm and dry; lower jaw hanging down; occasional starting; when roused spoke in a whisper, and asked for drink; frequent purging and vomiting of watery fluid.

Tinct. Camph. now and then, Merc. sol., 3d, every hour.

19th November, ten, A.M.—No vomiting, purging, nor cramps since ten last night; slept pretty well; no urine passed since yesterday; skin warm; pulse 96, feeble; drowsy, wakes occasionally with desire to vomit.

Continue Camph. and Merc.

20th, half-past six, A.M.—Rested well all night; urinated through the night; skin natural; great thirst; feels better.

Continue Camph. and Merc.

21st, nine, A.M.—Was dressed and feels well.

Case L.

Mrs. C., aged forty-five.—Exhausted by attending on her husband who has been ill of cholera, and want of food. She has had trembling of the body, and chattering of the teeth all day, with purging, watery dejections passing from her bowels in gushes; feels very sick; has a desire to lie down; has passed no urine during the day. We saw her first at ten, P.M.—Skin cold; pulse 112, weak, with marked choleric expression of countenance.

Tinct. Camph. every now and then,
Merc. sol., 3d dil., at bed-time.

19th November, ten, A.M.—Much better, is up; no purging during the night; slept a little; much headach; pulse 92, firm.

20th, half-past six, A.M.—Reported quite well. She was out when visit was paid.

Case LI.

A. R., aged ten.—He has been confined to bed for more than six months with morbus coxarius, and is much emaciated; subject to diarrhœa for some months. This morning frequent purging and vomiting. We first saw him 20th November, at one, P.M.—Skin

cold; eyes sunk; dark sallow countenance; eyes turned up, half-shut when apparently asleep; purging and vomiting watery flocculent liquid; breathing languid; pulse 120, weak.

Tinct. Camph. now and then, Merc. sol., 3d dil., every hour.

21st noon.—Much better; bowels moved only once.

Continue Camph. and Merc. sol.

22d.—Took some food, and beer when thirsty—began to vomit and purge.

23d.—Vomiting and purging continue; nearly pulseless.

Continue Camph. and Merc. sol.

24th.—Free from pain in haunch; eyes turned up; speechless.

Continue Merc.

25th.—No vomiting and purging; exhausted and thirsty; pulse getting stronger.

26th.—No vomiting; bowels not moved for two days.

Continue Merc.

27th.—Has taken some food; bowels not moved; pulse 84, full; begins to cry again from pain in the hip.

Case LII.

M. A., a woman, aged forty-five.—Her only child died of cholera last night. She is of intemperate habits, and has been drinking to excess for a day or two, and has had bowel complaint for a few days. Between three and four this morning began to vomit. We first saw her at half-past nine, P.M., 22d November.—She had frequent vomiting of a clear watery fluid; purging, stools reported as consisting of brownish fluid mixed with blood; urinated half an hour ago; frequent cramps in feet and hands; pulse 74; face cold; extremities at times cold; countenance dusky, expressive of great anxiety; smells strongly of spirits.

Tinct. Camph., every quarter of an hour.

23d, half-past eight, A.M.—Pulse 120, small; vomited once, and no purging since last visit; skin warm; she has been very restless through the night; passed a good deal of wind; urinated abundantly this morning; great thirst; complains much of weakness.

Continue Camph.

Twelve, noon.—Vomiting a good deal for the last two hours; complains of soreness over the stomach and bowels; extremities cold.

Arsen., 3d dil., every hour.

Eight, P.M.—General heat good; cramps continue in legs.

Continue Arsen.

25th, ten, A.M.—Bowels regular; pulse natural; urinating freely; sick and vomiting when she moves.

Ipecac., 3d dil., hourly.

26th, two, P.M.—Found sitting up drinking tea; says she is quite well.

The following case occurred in Portobello:—

Case LIII.

A girl, aged 13, was seen at one o'clock, P.M., on the 29th of October. No previous bowel complaint. Passed no urine since last night. At four this morning seized with vomiting and purging of white fluid every few minutes, and cramps in legs and arms.

First seen at one, P.M.—Surface of the body cold; face livid; eyes deeply sunk, surrounded with dark circles; tongue pale, cold, and flabby; breath cold; voice hoarse and querulous; expression anxious; quite pulseless; restless; vomiting clear, watery fluid; evacuations described white and fœtid; complains of cutting pain in right side catching breath. Epigastrium painful on pressure.

Camph. at intervals of five minutes.

In ten minutes pulse quite perceptible; tongue and lips very cold; no vomiting or purging.

1-20.—Vomited once; much pain in epigastrium.

Cupr., 3d.

1-40.—Pain abated; vomited once.

Continue alternately with Verat.

2-45.—Vomited once; burning pain in belly, and desire to sleep.

Arsen., 3d.

3.—Some cramps in hands; pain catching breath; pulse very feeble.

Continue Arsen., every quarter of an hour.

3-10.—Pain in bowels increased.

Cupr., 3d.

3-25.—Pain relieved; once vomiting.

Arsen., 3d.

5-45.—Has had three or four attacks of vomiting; pulse small,

rapid; tongue and skin warmer; urgent thirst; burning heat in stomach; moaning.

Continue Arsen., 3d.

30th.—Restless through night; great thirst; vomiting continues; skin and tongue warm; pulse 120, small; bowels once moved, reported very fœtid; ineffectual desire to relieve bowels.

Continue Arsen., 3d.

Two, P.M.—One copious fœtid stool; passed a little urine; skin warm; complains of hunger, and has no pain.

Five, P.M.—Pulse 120; continues free from pain.

Continue Arsen., 3d,

taken in a table-spoonful of gruel every second hour.

1st November.—Much better.

Case LIV.

Mrs. M'K., aged 56.—A dirty house. She has been purging three or four days; seized 22d November, four, A.M. First seen at seven, A.M. She was purging white watery fluid; vomiting everything taken; cramps in legs and arms; great thirst; oppressed breathing; pulse 128, weak; skin cold and dry; lips blue; tongue cold; puffed countenance; suppression of urine.

Arsenic, 3d, every quarter of an hour.

Noon.—No vomiting; bowels moved once.

Continue half-hourly.

23d, eleven, A.M.—Vomited twice, and bowels moved three times; great thirst.

Veratrum, 3, and Arsenicum, 3, every quarter of an hour.

24th, ten, A.M.—No vomiting nor purging, but sick and thirsty; pulse 96, fuller.

Continue.

25th, three, P.M.—Much better; feels hungry.

26th.—Is up, and says she is quite well.

Case LV.

J. R., aged 31, seized 24th November, two, A.M.—First seen, eight, P.M. Very poor, the bed with scarcely any covering. On Monday got wet feet, and has been cold and shivering with bowel complaint since. Vomiting began at two this morning, and continues, only however after drinking; constant inclination to vomit;

purging, dejections described as of colourless water; urinated at nine, A.M.; severe cramps through the day in legs; voice hoarse; great thirst; complains of weakness in bowels; tongue warm, white; pulse indistinct, but perceptible.

Camphor at intervals of ten minutes.

25th, half-past twelve, A.M.—Purged once; vomited four times, fæces like butter-milk; heat in stomach; coldness in throat; pulse perceptible, quick and small; ineffectual desire to sleep; no urine; cramps continue.

Arsenic, 3, and Veratrum, 3,
alternately, every quarter of an hour.

Ten, A.M.—Much cramped till four this morning; no urine; bowels twice opened, fæces white, like thick gruel, fœtid; vomited three times; tongue and skin warmer; pulse 100, small.

Continue medicine.

Three, P.M.—No urine; feels a little sick; painful sensation over the region of the bladder; the other symptoms gone.

Digitalis and Arsenic alternately every hour.

25th, ten, P.M.—No better; much pain at lower part of abdomen; had three stools since last visit of whitish flocculent liquid; no urine; vomited several times the water she drinks; thirst; pulse small, weak, about 96.

Arsenic hourly.

26th, two, P.M.—Vomiting greenish fluid; bowels very open; pulse 96, weak; skin dry and cold.

Continue.

27th, half-past eight, A.M.—Pulse 84; skin warm; voice still hoarse; one scanty bilious stool; vomited three or four times, greenish water; no cramps; slept none; urinated a little this morning.

Ipecacuanha, 3, hourly.

Eleven, A.M.—Urinated an hour ago; much thirst and vomiting.

Arsenic hourly.

28th, nine, A.M.—Slept well; urinated twice; no vomiting nor purging; pulse 80; skin and tongue still inclined to be cold.

Continue.

Half-past two, P.M.—No vomiting; bowels moved twice; stools thin and yellow; less thirst; feels hungry.

29th.—Urinated freely; bowel complaint gone; feels well, except weakness; very hungry.

Case LVI.

T. S., aged 40, a tailor.—Said to be of temperate habits, but admits he was drinking on Saturday; has had some pain in the bowels and diarrhœa for the last few days; seized 26th November, four, P.M. First seen half-past nine, P.M. Vomiting of everything taken; purging after drinking; matter vomited and purged is a colourless fluid with white flakes; urinated a little time ago; pulse quick, perceptible, weak; hands coolish; tongue pale, rather cold; breath warm; a little pain in the lower part of the belly; no cramps; complains of general uneasiness.

Camphor every ten minutes.

27th, half-past eight, A.M.—No purging since twelve o'clock last night; urinated sparingly about eleven, P.M.; vomited frequently, especially after drinking; great insatiable thirst; pulse perceptible but indistinct; trembling of the whole body; skin colder; tongue and breath warm; voice fuller and stronger; says he has no pain, complains only of thirst.

Arsenic, 3, every half-hour.

One, P.M.—Pulse 96, weak; skin warmer; no urine; less vomiting and thirst.

Camphor every quarter of an hour.

Half-past nine, P.M.—Still sick; no urine; less thirst; slept quietly, at intervals, this evening; skin and tongue warm; pulse 92; uneasy.

Arsenic, 3, every half-hour.

28th, half-past eight, A.M.—Slept a good deal through the night; vomiting at times, especially after drinking; purged once; has not urinated; pulse perceptible but indistinct; skin warmer.

Continue.

Two, P.M.—General heat pretty good; pulse rather indistinct; bowels opened, dejections white; urinated three hours ago.

Continue.

Seven, P.M.—Says he feels "queer," but is in good spirits; passed urine; thirst much abated; heat natural.

29th, eight, A.M.—Slept well; urinated twice; purged once, stool brown and fæculent; pulse 74; feels languid; no pain; bad taste in mouth.

Mercurius, 3d, every four hours.

30th, noon.—Slept a good deal yesterday, restless through the night; urinated freely; bowels regular; hungry; pulse 88.

1st Dec., seven, A.M.—Slept well and feels better.

2d.—Up and feels well—better, he says, than he has done for some time.

Case LVII.

C. S., a woman aged 23.—Lying in the same bed with a woman who died of cholera. Attended and dressed the body of a patient who died of cholera; has been sick and purging ever since. Was seized 27th November, eight, A.M. First seen same day, three, P.M. Severe cramps in the feet and legs; almost continuous vomiting and purging; evacuations watery; giddiness; sense of soreness and pressure over the stomach; passed very little urine; eyes much sunk, with dark-blue areola; pulse small, at times imperceptible; hands and arms cold.

Camphor every ten minutes for half an hour, then
Veratrum, 3d, half-hourly.

Ten, P.M.—Tongue and face cold; cramps in legs; great thirst; restless; bowels opened twice; urinated at noon; pulse small and indistinct.

Arsenic, 3d, every half-hour.

28th, eight, A.M.—Slept a little through the night; cramps in legs and right arm; great thirst, vomiting after drinking; bowels once moved, stool consisting of about two ounces of reddish fluid; pulse 112, fuller; tongue rather warmer; voice clearer; no urine; less lividity of face.

Continue Arsenic, Camphor occasionally.

Noon.—Thirst and vomiting still continue; no purging; great abortive desire to urinate a little time ago.

Continue.

Half-past three, P.M.—Sighing and breathlessness; pained above the right haunch; very thirsty; vomiting whitish watery fluid; pulse 120, feeble.

Continue.

Nine, P.M.—Restless and tossing about, suffering from cramps in front of the left leg; moaning; vomited twice watery fluid, with white mealy sediment; urinated three hours ago; eyes sunk; vacant dark countenance; sighing frequently; skin cold and dry; pulse 120, weak.

Continue.

Ten, P.M.—Inclined to purge, but cramps come on when she attempts to rise; thirst less; looks better; face warmer; catamenia have come on.

Continue.

29th, half-past nine, A.M.—Slept from twelve to five this morning, when she had some cramps in the front of the legs; skin warm, except the arms, which are lying bare; face warm; vomiting only after taking cold water; retains the Camphor; urinated through the night; bowels not moved; pulse 124, weak.

Continue.

One, P.M.—Very sick, vomited twice or thrice; severe pain in belly; headach; pulse 110, weak; tongue warm.

Continue.

30th, one, P.M.—Slept well; bowels not moved; urinated freely; pulse 88; heat of skin natural.

Continue.

Four, P.M.—Better.

Six, P.M.—Continues to improve; no purging nor vomiting; still thirsty, took some gruel this afternoon, and felt sick.

Bryonia, 3d, every two hours.

1st Dec., six, A.M.—Bowels not moved.

Eight, P.M.—Much better; able to walk about.

2d Dec., eleven, A.M.—Is up; bowels costive.

Nux, 3d.

Ten, P.M.—Going about well.

Case LVIII.

Mrs. G., aged forty-five. Intemperate. Attacked 28th November, two, P.M. First seen, seven, P.M. Frequent purging, evacuations watery; nausea and almost constant vomiting; breathing oppressed; heart's action weak; pulse weak, but perceptible; aspect described by her daughter as much altered; tongue cold; voice natural; no urine for twelve hours.

Camphor every ten minutes.

Ten, P.M.—Tongue cold; two brown, bilious stools; very sick some cramps in legs; pulse 80.

Mercurius, 3d, every four hours.

29th, nine, A.M.—Slept a little through the night; pulse 106;

skin warm; tongue cold; severe cramps and vomiting; purging dark greenish water as she lies; no urine.

Arsenic, 3d, every hour.

Two, P.M.—Pulse 96, small; cramps abated; skin warm; face and tongue cold; less vomiting; purged three or four times.

Continue.

Twelve, P.M.—Still sick; some pain in legs; no urine; pulse 104; skin warm, except the face; purged three times; is faint when she attempts to rise; dry retching; pain in stomach, increased on pressure and by cough; stools scanty, white.

Mercurius, 3d, every hour.

30th, noon.—Slept well last night; urinated once; no motion of bowels; pulse 92; still vomiting; frequent abortive desire to relieve bowels and to urinate.

Nux Vomica, 3d, every two hours.

Four, P.M.—Giddiness; no purging; pulse 96.

Continue.

1st December, seven, A.M.—Sick all night; vomiting this morning; skin warm.

Continue.

Nine, A.M.—Nausea.

Seven, P.M.—Much better.

Continue.

2d, noon.—Still vomiting when she raises her head; purging a little; urinated last night.

Arsenic every two hours.

Three, P.M.—Better; sitting up attending her daughter.

4th.—Pulse 84, of good strength; feels well, though weak.

Case LIX.

C. L., aged forty-four.—Has been attending a case of cholera. Of such dissipated habits that her family, who are in respectable circumstances, cannot have her with them. About three, P.M., 6th December, she was seized. First seen, 7th December, one, A.M. Feeling of coldness over the whole body; violent shiverings and cramps; constant sickness, vomited seven or eight times since seizure; purging several times (dejections not seen); urinated a little time ago; great thirst; heart's action weak; pulse 74, weak; skin cold, shivering violently; tongue cold; giddy.

Camphor every quarter of an hour.

Eight, A.M.—Pulse 100; hands and tongue warm; great pain in epigastrium, increased on pressure; vomiting; no purging since last visit; cramps continue, but less severe; giddiness; thirst and headach; urinated about an hour ago; constant nausea; slept none; still shivering during the cramps.

Ipecacuan., 3d, hourly.

Six, P.M.—Great thirst; much pain in the belly, with continual eructations; pulse 120, weak.

Continue alternately with Aconite.

8th, eight, A.M.—Some pain during the night; feels better this morning; temperature of the skin natural.

10th.—Better; still some pain after food, which is regurgitated in mouthfuls.

Nux, 3d, night and morning.

Case LX.

Mrs. A., aged fifty-six. A case of cholera occurred in the house previously. Has had bowel complaint since yesterday morning, 7th December, at six o'clock. Vomiting began last night about ten, with cramps in different parts of the body. First seen 8th December, three, A.M. She says that for four hours she did not know where she was, and thought "she was lost;" purging brown, fœtid, watery liquid; watery vomiting; cramps in legs, arms, back, and neck; very thirsty: quick, oppressed breathing; pulse 120, weak; face dark; skin dry and cold; voice husky.

Mercurius, 3d, every quarter of an hour.

Six, A.M.—Much better; pulse 100; perspired profusely; bowels moved twice, with desire to vomit; stools whitish, watery, offensive.

Continue every half-hour.

Ten, A.M.—Stools thin, brownish, fœtid; pulse 100; skin warm; voice stronger; no urine.

Arsenic, 3d, every half-hour.

Four, P.M.—Urinated abundantly at two, P.M.; pulse 92, weak; thirsty; says she is better.

Continue.

Eleven, P.M.—Much the same; bowels not moved.

9th, eight, A.M.—Slept pretty well; bowels not moved; urinated twice.

Continue.

Three, P.M.—Better; feels inclined to rise.

She has had a foul ulcer on the left ankle for many years. Medicine to be continued on account of it.

Case LXI.

E. B., a woman, aged thirty-three. Her child died of cholera yesterday morning. Was quite well last night when she went to bed. At three this morning, 10th December, she was seized with bowel complaint; fæces ran from her before she could rise, since has purged every fifteen to twenty minutes, stools reported at first natural in appearance, latterly of clear water; vomiting commenced at the same time; cramps about an hour afterwards; vomited during the visit clear water, which ran from her without much retching in a continuous stream; complains of pain in the side; much cramped in the calves of the legs; no urine since last night; pulseless; respirations eighteen per minute; has taken camphor since four, A.M., every ten minutes without improvement; skin cold; tongue pale and cold; breath cold.

Seven, A.M.—A bottle containing water saturated with Arseniuretted Hydrogen was held to her nose for a few seconds; in a little time the cramps ceased; no other change.

Arsenic, 3d, every quarter of an hour.

Nine, A.M.—No change; two or three fits of cramps; vomited and purged once.

Continue.

Noon.—Lying in a supine position, breathing slowly and calmly, without elevation of the thorax; face dark, cold; tongue and breath cold.

Continue.

Three, P.M.—Was retching during the visit, and vomited a large quantity of watery fluid; pulse 92.

Continue.

Five, P.M.—Purging and vomiting rather less; lying quiet; pulse perceptible; in other respects the same.

Continue.

11th, nine, A.M.—No purging; little vomiting for four hours; tongue cold; pulse 100, weak; cramps in legs.

Continue.

Four, P.M.—Pulse 82, fuller; tongue and skin warmer; vomited once; no purging.

Continue.

12th, half-past eight, A.M.—Rested quietly till three, A.M.; pulse 92, pretty full; tongue dry; body warm; no urine; severe pain in bowels, increased on pressure; face blue; bowels once moved; no vomiting.

Arsenic, 3d, and Bryonia, 3d, alternately every half-hour.

Two, P.M.—Very uneasy, and still cramps in the bowels.

Continue.

13th, nine, A.M.—Slept a good deal; much less thirst; feels very weak; pulse 100, sharp, but tolerably strong; tongue moist, cool; no oppression of chest; urinated for the first time yesterday at three, P.M.; dry retching; bowels moved last night and again this morning, stool fæculent.

Continue.

One, P.M.—Pulse 100; complains only of weakness; no vomiting nor purging.

Continue.

Half-past nine, P.M.—Nausea after drinking; tongue moist; urinated very freely; feels hungry.

Continue.

14th, half-past nine, A.M.—Rested pretty well; pulse 90, very weak; tongue moist, pretty clean; thirsty; complains only of weakness; urinated; bowels not moved since last night.

To have a spoonful of sago every two hours.

Two, P.M.—Bowels not moved; feels better; pulse 92; face much flushed.

Continue Ars. and Bryon.

Half-past four, P.M.—Still nausea and thirst; in other respects unchanged.

Continue.

Nine, P.M.—Continuing better.

15th, nine, A.M.—Rested well; pulse 86, weak; feels herself stronger this morning; still no motion of bowels; urinating freely.

Nux Vomica, 3d, three times a day.

16th.—Bowels not opened.

Continue.

17th, nine, A.M.—Bowels costive; continuing to improve.

Half-past eleven, A.M.—Sitting up in bed, says she is well.

Continue.

18th.—Pulse slow, weak; bowels opened once yesterday.

Continue.

19th.—Gradually gaining strength; sitting up part of the day; bowels costive.

Continue.

20th.—Continuing well.

Case LXII.

J. P., aged 50.—A fatal case of cholera occurred in this stair last week, and he has been in attendance on a patient who died. Bowel complaint began on Tuesday, accompanied with giddiness. He has been taking Camphor since Thursday, and Mercurius yesterday. To-day the bowel complaint became much more severe; stools copious, thin, reported of a brownish-yellow colour, very fœtid; great thirst, has been getting hot water to drink; vomiting began 10th December, three, P.M.; seen at nine, P.M.; vomited three or four times a dark-red liquid with a sour smell; urinated scantily three or four times during the day, last time about three hours ago; no pain, heat, nor coldness in bowels; throat very dry and sore when swallowing spittle; speaks as if his mouth was parched; when the abdomen is compressed the wind rumbles from side to side; vomits a few minutes after drinking; feels excessively restless, and wishes for change of posture; skin warm; face anxious, dusky; tongue warm, covered with a dark fur; pulse 82, weak, fullest in the right arm; respirations 22, abdominal; alternate respirations feeble; voice weak.

Arsenic, 3d, and Veratrum, 3d, alternately every half-hour.

11th, nine, A.M.—Passed a restless night; vomited four or five times before four, A.M., not since; constant purging; stools like thin rice water, fœtid; pulse 84; pain and uneasiness in epigastrium preventing rest; less thirst.

Continue.

Half-past four, P.M.—Has been pretty well all day till about an hour ago, when the uneasy feelings returned; fæces of the same colour; no vomiting.

Continue.

12th, nine, A.M.—Had a restless night, felt drowsy but could not

sleep; medicine made him sick; frequent desire to purge, stools slightly fæculent; frequent abortive desire to urinate, the urine passed is scalding; thirst much less; pulse 88, pretty full; feeling of emptiness in stomach, and frothy vomiting.

Secale, 3d, hourly.

Two, P.M.—Doing well; urine still scalding.

Eight, P.M.—Scalding gone.

13th, nine, A.M.—Restless night; some purging, stools fæculent; pulse 88, good strength; tongue furred; empty retching; uneasiness in epigastrium, increased on pressure; urinating freely.

Continue Secale.

Nine, P.M.—Sitting up in bed taking sago; feels better.

14th.—Feels much better.

Case LXIII.

Mrs. D., aged 56.—Has been ill with bowel complaint since yesterday morning; everything she takes passes from her bowels undigested; she has a constant desire to evacuate, with cutting pains, headach, nausea, and inclination to vomit. Was seized on the 15th December, at twelve, P.M., with severe cramps in the feet, legs, and right arm, and in the stomach, with a feeling as if she was going to be choked. First seen at seven, P.M., 15th December. The cramps are somewhat diminished, but there is still severe pain in the stomach; sensation of choking; tongue clean and adhesive; face has a dusky appearance; eyeballs leaden-coloured; dejections frequent, of a brownish colour; has urinated regularly, but scantily; pulse 86; great thirst.

Arsenicum, 3, every half-hour.

16th, five, P.M.—Cramps returned with great severity at three o'clock, (some one gave her brandy); they continue now unabated; it is scarcely possible to hold her in bed, from the intensity of the cramps; has been vomiting incessantly for an hour.

Continue, with Veratrum alternately, half-hourly.

Nine, A.M.—Nausea; vomited and purged twice since last visit; pulse 92, stronger; skin warmer; slight cramps.

Omit Veratrum: continue Arsenic.

Half-past eleven, P.M.—Vomiting everything taken; no purging since last visit; cold; cramps less severe.

Continue. To drink warm water.

17th, half-past nine, A.M.—Snatches of sleep through the night; cramps less severe, vomiting after drinking; constant nausea; purged four times; stools reported to consist of dirty water; skin much warmer; pulse 98; tongue warm; no urine; cramps recur with the vomiting.

Continue.

Noon.—Still thirsty, and sick after drinking water; tongue warm, covered with white fur; pulse 96.

Continue.

18th, eleven, A.M.—No vomiting since last night; bowels moved once this morning; stools brownish, watery; urinated at eight, A.M.; skin warm; tongue and breath warm; is flushed in the face; tongue white; coughing, and expectorating yellow thick mucus.

Two, P.M.—No vomiting nor purging since last visit; complains greatly of pain in right inguinal region; great sickness and inclination to vomit; body warm; face flushed.

Bryon., 3, every two hours.

Nine, P.M.—Pain in side, checking breath; tongue moist; urinated twice; bowels moved in the morning; pulse 104, rather full.

Continue.

20th, one, P.M.—Is better; complains of sickness on raising her head.

Ipecacuan., 3.

22d.—Recovered.

Case LXIV.

R. U., aged 19, a soldier.—Was quite well when he went to bed last night, 15th December. Woke about twelve, P.M., his abdomen swelled and hard; vomiting and purging, with slight cramps in legs, came on; felt better in the morning. About three, P.M., 16th December, the vomiting and purging returned; has had no appetite to-day. Seen first same day, twelve P.M. Great thirst; vomiting after drinking; stools reported of thick mucus; no urine since yesterday; cramps, severe in calves, come on in paroxysms every fifteen to twenty minutes; nausea, especially when purging, and giddiness; pulse 104, full; respirations 18; tongue white, bloodless, cold; burning heat in throat; copious purging of brownish water.

Arsenic, 3, and Cuprum Aceticum, 3,

alternately every half-hour.

17th, eight, A.M.—Slept none; cramps very frequent and severe

all night; vomiting of watery fluid in large quantities, especially after drinking; purged eight or nine times, stools watery, with a grey flocculent cloud; voice unaltered; frequent sighing; no lividity; skin and tongue warm; no urine; great thirst; constant nausea; pulse 78, fluttering.

Arsenic, 3, and Veratrum, 3, alternately every half-hour.

Three, P.M.—Voice husky; tongue and breath cold; pulse weak; complains of oppression in chest; very thirsty; vomits and purges after drinking cold water; still cramped in the front of the legs; asking for food.

Omit Veratrum: continue Arsenicum.

18th, half-past eleven, A.M.—Better; skin, tongue, and breath warm; no vomiting since midnight, when he was very restless, got up, and fainted; when put into bed again, he was anxious to be up. About one, A.M., fell asleep; awoke repeatedly, but lay pretty quietly till eight, when his bowels moved, and he urinated; the stool copious liquid, of a dirty orange colour, with flakes; voice still rather husky. Has taken a few tea-spoonfuls of sago.

Continue Arsenic. Camphor in water occasionally.

Ten, P.M.—Urinated at five, P.M.; bowels not moved; skin cold.

Continue.

19th, half-past nine, A.M.—Bowels twice opened; stools thin and watery; feels better, and hungry.

Continue.

20th, noon.—After taking a little sago yesterday was sick, and vomited; no purging; vomiting green water this morning.

Ipecacuan., 3.

21st, nine, A.M.—Much better; vomiting stopped; bowels still very open.

22d.—Very weak, but quite convalescent; and, as he is staying at a friend's house, removed to Castle Hospital.

Case LXV.

Mrs. Mc., aged 25.—A miserable cellar. The woman lying on straw, with very little covering. Intemperate. Taken ill on the 17th December, with purging, which continued till four, A.M., of the 20th, when it became much more violent, and accompanied by vomiting. Had cramps in the legs. First seen, three, P.M., of the 20th. Purging and vomiting dark watery liquid; surface cold;

hands shrivelled; face sunk and cold; tongue moist, covered with a yellowish white fur; pulse imperceptible; complains of great thirst, and pain in legs; passed urine this morning; voice hoarse.

Arsenic, 3, and Secale, 3, alternately every half-hour.

Eleven, P.M.—Vomiting and purging less urgent; still complains of pain in leg, says it is less severe; surface warmer; pulse perceptible, but indistinct; great nausea and thirst.

Continue.

21st, half-past eight, A.M.—Voice stronger and clearer; vomits only after drinking; feels very sick; pulse 100, stronger; skin warm; very little purging; urinated at two, A.M.

Continue.

One, P.M.—Pulse 84; skin warm; feels sick, but more comfortable; had no purging nor vomiting since last visit.

Continue.

22d, nine, A.M.—Pulse 82, weak; complains of chilliness and sickness; no purging nor vomiting; urinated through the night; skin and tongue feel warm.

Continue.

23d.—Pulse 90; no purging, vomiting, nor urine since last visit; took some food; felt sick after it.

24th.—Pulse natural; slept well; urinated freely; feels hungry; sickness gone.

26th.—Up and well, though weak.

Case LXVI.

E. S., a woman, aged 24.—On 22d December, at seven, P.M., was suddenly seized with violent cramps in the stomach, (felt as if the whole body was drawn together); in a few minutes the feet, legs, and hands became severely cramped; giddiness, nausea, and empty retching; great tossing of the body, and nervous excitement. First seen at nine, P.M.; she had just taken gt. 20 of solution of morphia. Skin hot and moist; feet and hands severely cramped; frequent cramps in the stomach; vomiting a liquid like rice-water; great thirst; oppression at the chest; face red; eyes inflamed and suffused with tears; beating at the temples; crying out from pain in the head, and wishing her hair to be taken out; pulse 110, small; suppression of urine.

Camphor, two doses.

Arsenic, 3, and Cuprum, 3, alternately.

Half-past ten, P.M.—Became quiet, and rested for half an hour, after which all the symptoms returned with great violence, particularly the cramps in the feet and legs; as the cramps disappeared she became very sick, and vomited a rice-water looking fluid.

Continue.

23d, two, A.M.—Long, deep inspirations; mouth wide open; eyes turned up; pulse almost imperceptible.

Half-past two, A.M.—Complained of pain in head; moaning heavily.

Belladonna, 3, every half-hour.

Nine, A.M.—Slept from five to six, moaning at times; pulse small and weak.

Arsenic, 3, every half-hour.

Two, P.M.—Had one return of cramps in hands and toes; complains of great sinking at the heart; pain in the back; urinated twice to-day; frequent shivering and moaning; skin warm and moist; tongue red in the middle, furred at the edges; eyes red.

Continue.

Nine, P.M.—Dozing at times; restless.

24th, ten, A.M.—Much better; pain in epigastrium, and coldness in the back.

Nux Vomica,3,

Nine, P.M.—Still improving; been up for some time.

26th.—Quite well.

Case LXVII.

J. McN., aged 47.—Has been exposed to cold, and is in destitute circumstances. Has had bowel complaint for two days, with frequent abortive desire to purge. At five, P.M., 30th December, the bowel complaint became very severe; about ten, P.M., began to vomit. First seen, 31st December, half-past eight, A.M. Vomits everything taken; very severe cramps all over the body, especially in the hands and legs; has not urinated since last night; fæces watery, nearly colourless, fœtid; vomiting of watery fluid; complained of cold and shivering, though the skin was warm. Expression anxious; face dusky, inclined to be cold; eyes sunk, with dark areola; tongue furred, cold; hands shrivelled, dusky, and cold; body

cool; very great thirst; pulse 104, very weak; complains of pains in the belly, with feeling of burning in the stomach at times. Respirations 30, oppressed; heaving; cramps return on the least motion; purging as he lies. Has taken camphor without benefit.

Arsenic, 3d, Secale, 3d, alternately every quarter of an hour.

Half-past one, P.M.—Feels easier; less vomiting; thirst still very great; purging continues; no urine; pulse 95, stronger; skin and tongue warmer; cramps less, both in frequency and severity.

Continue.

Half-past nine, P.M.—Skin and tongue ice-cold; pulse imperceptible; cramps very severe, especially in legs and hands; great retching; purging continues.

Arsenic, 3d, and Cuprum Aceticum, 3d, every half-hour.

1st January 1849, half-past eight, A.M.—Slept at intervals during the night; had abortive desire to urinate this morning; cramps continue, but much less severe; watery vomiting continues; purging rather less; pulse 100, small and weak; tongue warmer; skin warm.

Continue.

2d, noon.—Vomited an hour ago; watery and colourless purging during the night; headach; no urine; pulse rather weaker than yesterday.

Continue Arsenicum; omit Cuprum Acet.

Eight, P.M.—Feels better; pulse a little improved; vomiting and purging nearly subsided; urinated at half-past seven, P.M.

Continue.

3d, nine, A.M.—Pulse 60, rather weak; hiccoughing; pain in epigastrium, much worse on pressure; tongue moist, bluish; no cramps; urinated last night.

Bryonia, 3d, every hour.

4th, three, P.M.—Hiccough continues; pulse very weak; urinated freely; bowels not moved.

Arsenicum, 3d, and Nux, 3d, alternately every hour.

Eleven, P.M.—Hiccough abated; vomiting at times a watery, scalding fluid; pulse 68, very weak; restless.

Continue Arsenic.

5th, ten, A.M.—Urinating freely, but hiccough returned; pulse weak; bowels not moved.

Continue Arsenic, alternately with Cicuta, 3d.

6th.—Hiccough continues, but less severe; urinating freely; bowels once moved, fæces thin; pulse 72, stronger; less thirst.

Nux Vomica, 3d, every two hours.

7th, four, P.M.—Hiccough continues, but much less severe; urinating freely; bowels once moved; pulse 78, stronger; skin warm; has been taking porter, which brought on sickness.

Continue.

8th, eleven, A.M.—Sitting by the fire; hiccough continues; pulse stronger.

Bellad., 3d, every two hours.

9th, eleven, A.M.—Still hiccoughing; pulse small; tongue furred; skin hot.

Rhus, 3d, every two hours.

10th, ten, A.M.—Sleeping; tongue dry, glazed; pulse 94, weak; hiccough much abated.

Continue.

11th, eleven, A.M.—Stronger; tongue clean; one natural stool; occasional attacks of hiccough.

Continue.

12th, half-past ten, A.M.—Sitting up in bed; hiccough still troublesome; vomited barley, which he took yesterday; one stool; urinating freely.

Continue.

13th, nine, A.M.—Much better; hiccough gone; feels hungry.

Omit medicine.

15th.—Continuing free from hiccough; complains only of weakness.

Case LXVIII.

Mrs. T., aged 28.—Quite well last night. Felt unwell first, 3d January, eleven, P.M.; purging and vomiting began at twelve, P.M. First seen 4th January, four, A.M. Dejections copious, white, like rice-water; watery vomiting; no urine since last night; cramps in legs excited by motion; skin and face cold; eyes sunk; pain in left side; pulseless; has not vomited for an hour; great thirst.

Camphor, every quarter of an hour.

Eleven, A.M.—No purging; frequent vomiting of green water; pulse 120; surface warm, tongue warm; no urine, nor cramps; feels better.

Veratrum, 3d, and Arsenicum, 3d, alternately every half-hour.

Ten, P.M.—Pulse 78, weak; no purging; vomiting of green water continues; she is nursing, and her milk, which had disappeared, has returned; tongue furred, cool; great thirst; slept a little this afternoon; face natural in temperature and colour.

Continue Arsenic.

5th, eleven, A.M.—Slept well; urinated at five, A.M.; bowels once moved; stool reported yellow; pulse 72; less thirst; warm; feels hungry.

8th.—Up, and feels better, though weak and giddy occasionally.

Case LXIX.

D. S., aged 5.—This boy's mother died of cholera last week, in Glasgow; he, his brothers, and sisters, were brought here by his grandmother on Thursday last. A man in this house took cholera on that day, was removed to the hospital, and died. An old man also died on Saturday of cholera, and his body is at present lying in the house. This child has been purging since Friday. Last night, 6th January, about eight, P.M., the purging became very severe; milk, water, and wine, which were given him, passed undigested. First seen 7th January, five, P.M. Stools frequent, watery; vomiting everything taken, and large quantities of watery fluid; complains of pain in epigastrium; urine reported to be very scanty; skin and tongue cold; face cold, dark-coloured; eyes deeply sunk; expression anxious; moaning; pulse about 120, weak, at times scarcely perceptible; very great thirst. Has been warmer since taking some brandy two hours ago.

Arsenic, 3, every half-hour.

8th, eleven, A.M.—Pulse 110; bowels four times moved since visit; stools (last one) dark, fæculent; urinated this morning; vomited twice; less thirst; voice clearer; skin tolerably warm; tongue warmer.

Continue.

9th, eleven, A.M.—Was hungry last night, and had some gruel without producing sickness; slept well; wishes to rise this morning; pulse 80, natural; temperature of skin natural; tongue clean; urinating freely; bowels twice moved; stools brown, liquid; no thirst.

12th.—Sitting up; quite well; appetite good.

Case LXX.

Mr. K., aged 26.—Had nausea and vomiting through the night, with cramps in the abdomen and pains in the epigastrium. Seized at five, A.M., 9th January; first seen ten, A.M. Vomiting large quantities of whitish watery matter; purged once very profusely; pain in abdomen and epigastrium; shaking and chattering his teeth; great thirst; breath cool; pulse quick and weak; skin cold; no urine since early in the morning.

Camphor, every quarter of an hour.

Three, P.M.—Still sick; vomited twice, but free from pain; pulse fuller and regular.

Ipecacuanha, hourly.

10th, ten, A.M.—Very thirsty; vomited this morning watery liquid in abundance; frontal headach.

Nux Vomica, 3, every two hours.

Nine, P.M.—Shaking involuntarily; skin warmer; thirsty.

Continue.

11th.—Much better; to have arrow-root.

12th.—Continuing to improve.

13th.—Up, sitting at fireside; feels hungry.

Case LXXI.

W. C., aged 27.—A day-labourer, of tolerably sober habits, living in a very poor and wretched garret. Has had bowel complaint for several days. Seized 14th January, eight, A.M.; first seen two, P.M. Purging very severe; stools copious and watery, with a feeling of cold; sickness; cramps in the legs and abdomen; pulse 60, weak; tongue very white, loaded, and clammy, cold; tenderness of the abdomen on pressure; passed no urine since last night; very sick; vomited very frequently white mucus, tinged with bile; stools colourless; complaining of frontal headach.

Nux Vomica, 3d, every hour.

Nine, P.M.—Pulse more distinct; cramps not so frequent nor severe; purging and vomiting still continue.

Arsenic, 3d, every hour.

15th, ten, A.M.—Had a bad night; vomiting and purging continue; no cramps; tongue cleaner; pulse 100; face a little flushed; less tenderness of the abdomen; stools more faeculent, and passed urine.

Continue.

Six, P.M.—Slept a little; no headach, nor cramps; purging continues, with tenesmus; stools more fæculent; tongue cleaner; occasional sickness still continues.

Mercurius, 3d, every hour.

16th, ten, A.M.—Slept pretty well; feels much better; pulse 68, good strength; feels weak; has taken some gruel; no sickness after it; purging continues, but much less severe; urinating freely.

Continue.

19th.—Completely recovered.

Case LXXII.

W. N., aged twenty-five.—A sawyer. Was drinking for the last three days, and taking scarcely any food. 27th January, two, P.M., felt sick, and vomited three times a large quantity of bloody liquid, with cramps in the abdomen and attacks of syncope; took castor oil at four, P.M., with laudanum; vomited it; his bowels became loose, without pain; about seven, P.M., the stools were copious and bloody. Seen first at eleven, P.M. He was pale, ghastly, and cold; pulse languid, and scarcely perceptible; very thirsty; epigastrium tender; tongue, lips, and breath cold; expression anxious. Upwards of a pint of blood, with coagula, was passed from the rectum after three painless stools; no urine since morning.

Camphor occasionally, and Mercurius, 3d, every hour.

28th, eleven, A.M.—Warmer; pulse weak, 98; face and lips pale; less thirst; bowels moved twice; stools still bloody; says he feels better; urinated this morning at seven.

Continue.

Half-past seven, P.M.—Bowels not moved; pulse 84; skin cold; thirsty.

Continue.

29th, half-past one, P.M.—Went out to work, but obliged to return in two hours, from pain in the epigastrium.

Continue.

30th.—Better; feels sick when sitting up; bowels not moved.

31st.—Quite well.

Case LXXIII.

Mrs. A., aged eighty-five.—A tall woman, bent double, but still

cheerful and healthy, except the right ankle-joint, from which there is a grumous, watery discharge, as if from ulceration of the cartilages, though it often heals up. About a month ago, the ankle became swelled and painful; the swelling went up as far as the knee, and assumed an erysipelatous type. Now recovered. Last night, 21st January, she felt sick, and shivered; frequent vomiting of the water drank; severe purging of a greenish, brown, watery liquid; stools passed involuntarily in bed. First seen, 22d January, six, P.M. She had great thirst, was apparently sinking, being cold, powerless, and dejected; said she was dying; pulse 108, very weak, and intermittent.

Camphor occasionally; Arsenic, 3d, every hour.

23d, nine, A.M.—Passed an easier night; stools less frequent; still very sick; skin a little warmer.

Continue.

Ten, P.M.—No urine since last night; less thirst; bowels moved four times; stools offensive.

Continue.

24th, ten, A.M.—Bowels not moved till six this morning, when she urinated; no pain in ankle-joint; pulse quick.

Continue.

Eight, P.M.—A little better; bowels open; tenesmus; skin dry, warm; nausea continues.

Merc. 3, every two hours.

25th, noon.—Bowels moved six times; stools scanty, bilious; has urinated.

Continue.

26th, eight, A.M.—Worse; took porridge for supper last night; feels sick, and has tenesmus.

Continue.

Ten, P.M.—Up, sitting at the fire.

27th.—Bowels open three times; stools scanty; is hungry.

28th.—Is better; sitting up and cheerful; pain in ankle returned.

29th.—One natural stool.

30th.—Says she is quite well.

1st February.—Continues well.

Case LXXIV.

J. D., aged forty-two.—His mother and brother died of cholera

in December last. He is a notorious drunkard. Has been drinking all last week, and taking very little food. Diarrhœa came on three days ago. Took opium, rhubarb, and Allopathic mixtures, which were vomited; took brandy and beer, which were also vomited. Both yesterday and to-day, 11th February, purging has been severe; stools liquid, copious, watery, white; vomiting everything taken. Cramps in both legs since three this afternoon. First seen at ten, P.M. Countenance dark and pinched; eyes sunk, open; tongue, lips, and breath cold; the pulse barely perceptible; voice hoarse and feeble; can scarcely turn his head, from exhaustion. The purging has been involuntary since five or six this afternoon, and he thinks himself dying.

Camphor diffused in water to drink.

Arsenic, 3, every half-hour.

12th, seven, A.M.—Found sitting at the fireside; cold like ice; pulse very weak and thready; says he is easier when up, and freer from cramps when stooping forward; had no sleep last night; no vomiting nor purging since visit, and is less thirsty.

Continue. Ordered to go to bed.

Nine, P.M.—Much warmer; pulse distinct, but very weak; bowels not moved; no urine since yesterday morning.

Continue.

13th, nine, A.M.—Says he feels better, but not stronger; urinated abundantly this morning; bowels not moved.

Continue.

Five, P.M.—Pulse 108, firmer; skin warm, more natural in colour, and the countenance composed.

Continue.

14th, ten, A.M.—Slept well last night; bowels once moved; stool liquid, brown, offensive; pulse 96.

Continue.

15th, two, P.M.—Was restless last night; perspired towards morning; pulse 88, soft.

Continue.

Eleven, P.M.—Says he is well; took beef-tea, and feels stronger since; pulse 82, firm.

16th.—Up, and expressing gratitude for his rapid recovery.

The following is a case of recovery from the typhoid stage.

It was one of our earliest cases, and being seen by all of us very frequently, there was not so accurate a report kept by any one of us as we could desire. It was looked upon as quite hopeless.

Case LXXV.

Mrs. L., aged 35, seized with vomiting, and purging, and cramps in the arms and legs, at four o'clock, P.M., of 10th October; seen at six, P.M. She had violent convulsive fits, lasting from five to ten minutes, with fixed eyeballs, clenching of the jaws, and slight foaming at the mouth. Her pulse was irregular, varying every few minutes from 104 to 68 beats per minute. Abdomen exceedingly tender.

Aeon. and Nux Vom., alternately every quarter of an hour.

Nine, same evening.—No convulsions or cramps; abdomen still tender; only one stool; no vomiting; pulse 100, weak, regular. Continued to improve until the 12th, when she seemed convalescent. On the night of the 12th she went about the house, and ate potatoes.

At twelve, P.M., was seized with violent cramps in the limbs and pain in the abdomen. She was seen at half-past one, A.M., and found cold, and purging and vomiting.

Got Nux Vom., and Verat., and fell asleep.

When seen at five, A.M., she was in a state of perfect collapse, and not expected to live above a few hours.

She was ordered Arsen.

On the 14th, at four, A.M., the upper part of the body was quite cold; there was no purging and little vomiting; no pulse; and hiecough.

Secale and Verat. alternately.

At ten, A.M., same day, the pulse was just perceptible; tongue and breath not quite so cold. She was seen from this time by one of the medical officers every three or four hours for several succeeding days, and got chiefly

Arsenicum and Veratrum.

The symptoms gradually abated, but for several days the weakness was so great that she was not expected to recover. She gradually got better, and when seen on the 23d of November was quite well. She passed through the true typhoid stage.

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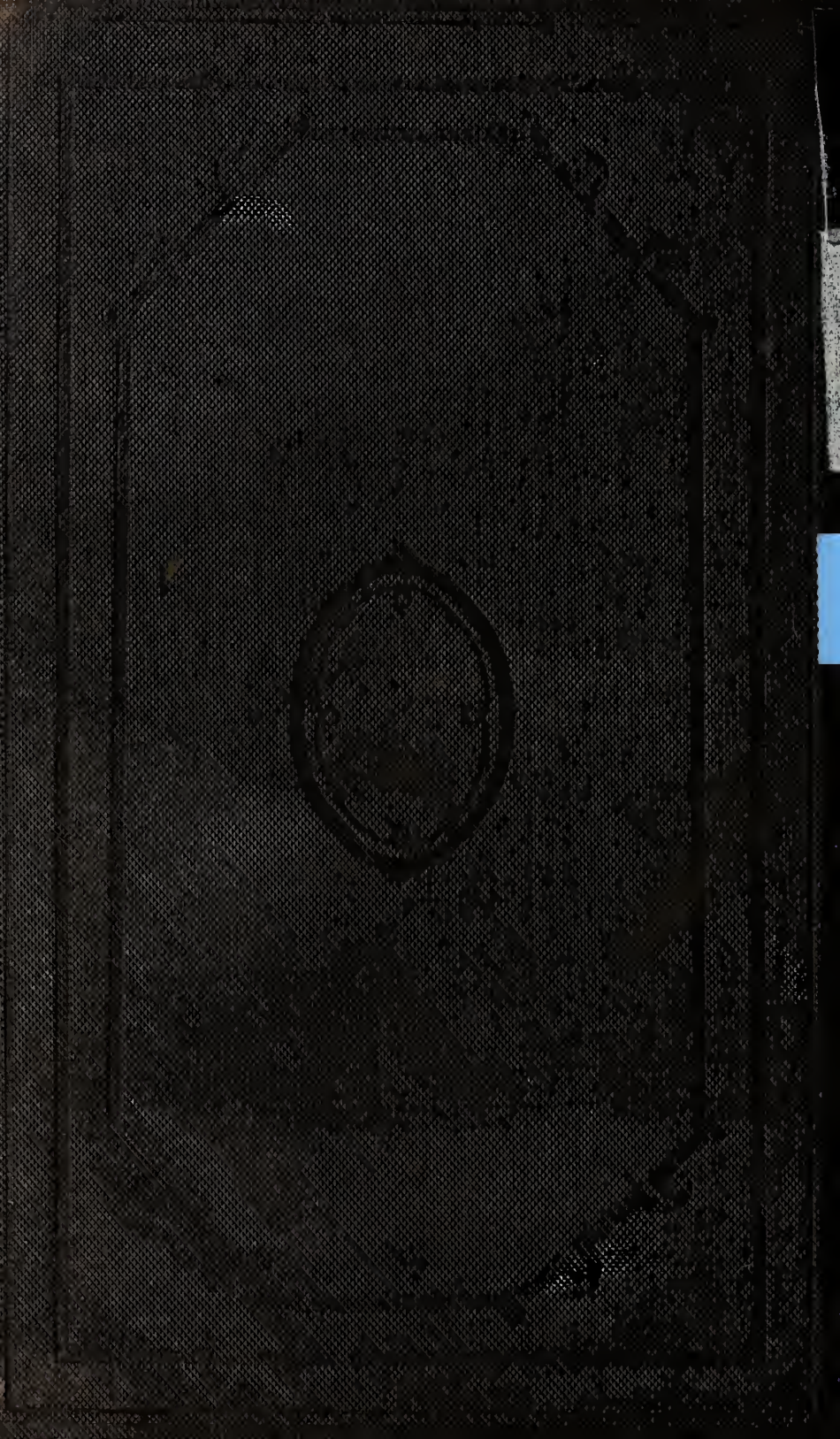
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